

IMPORTANT BIRD AND BIODIVERSITY AREAS IN INDIA

Priority sites for Conservation

Revised and updated 2nd Edition Vol. I



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**Second Edition: Revised and Updated
Volume I**

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HIMACHAL PRADESH

IN-HP



Great Himalayan National Park is one of the largest protected areas in the Indian Himalayas. It was declared as UNESCO World Heritage Site in 2014

Himachal Pradesh (30° 22' - 33° 13' North and 75° 36' - 79° 02' East) is situated in the northwest of India in the Himalayan ranges. It is bounded by Jammu and Kashmir in the north, Uttaranchal in the southeast, Haryana in the south and Punjab in the west and in the east it forms India's international boundary with Tibet (China). Himachal Pradesh has a geographical area of 5.57 million ha. The State is mountainous with altitudes ranging between 460 and 6,600 m. It has a deeply dissected topography, a complex geological structure and a rich temperate flora in subtropical latitudes. Himachal Pradesh is drained by a number of snow-fed perennial rivers. Chenab, Ravi, Beas, Sutlej and Yamuna are the important ones. Forestry in Himachal Pradesh constitutes the biggest land use.

Agriculture and horticulture are the mainstay of Himachal's economy as 71% of the people are engaged in these pursuits (Mathew 2003). Climatic conditions are suitable for a variety of fruits and cash crops such as seed potatoes, ginger, vegetable seeds, apples and other fruits. The main cereal crops are wheat, maize and paddy.

Himachal Pradesh is famous for its hill stations. Tourists come here mainly during the summer. The

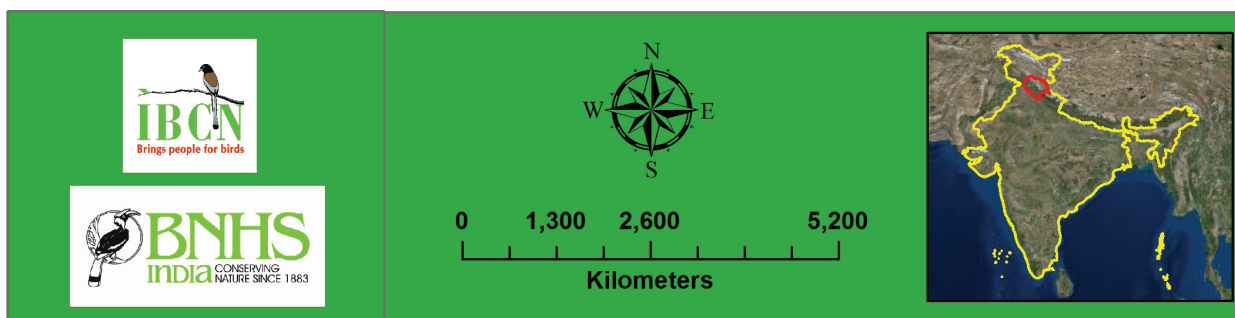
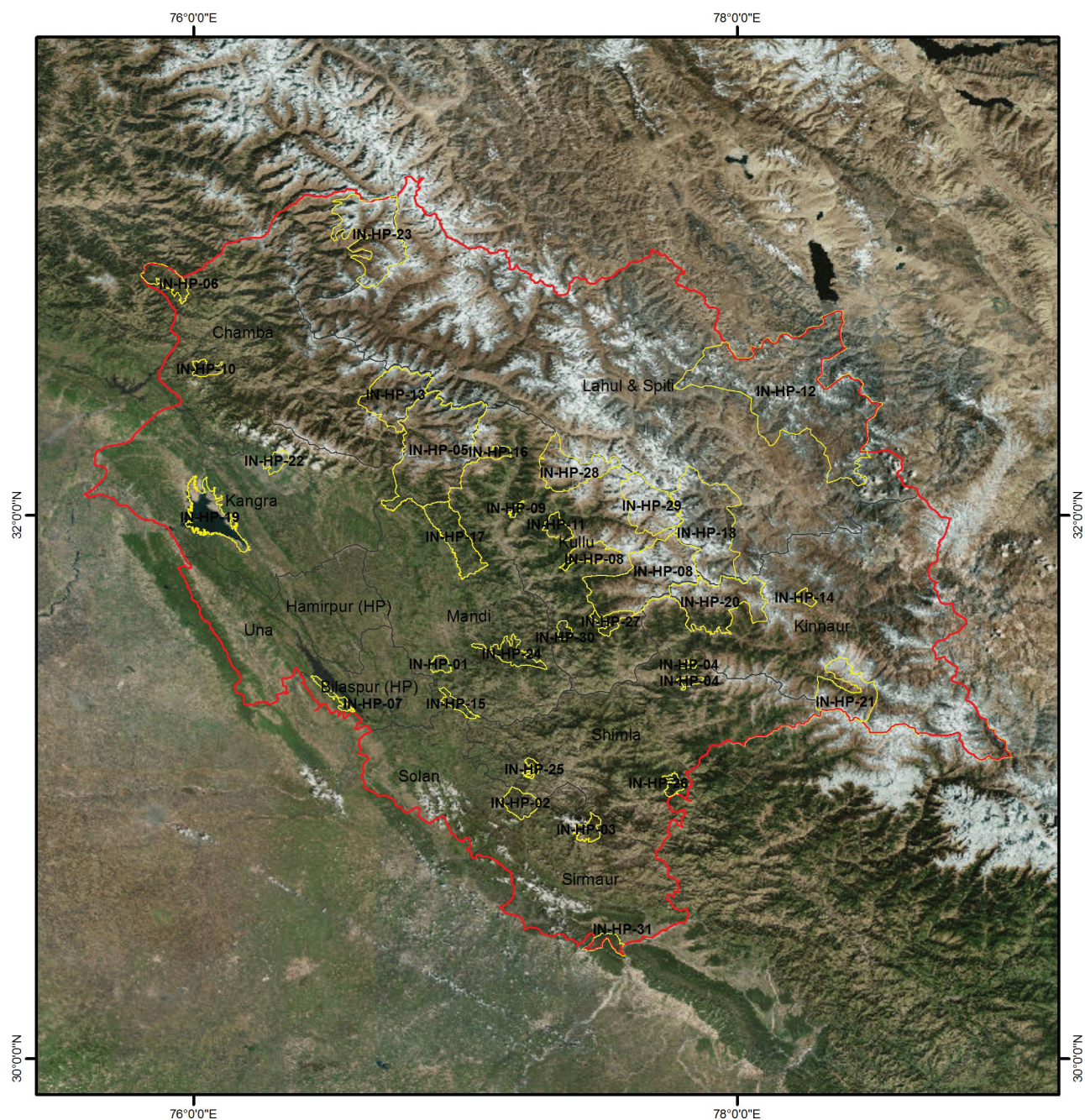
tourist department of Himachal Pradesh claims that Kharjiar in the Chamba district has earned the name "Mini Switzerland" because of the striking similarity in landscape.

The State is also known for its rich wildlife, especially for rare species such as Musk Deer *Moschus chrysogaster*, Himalayan or Asiatic Ibex *Capra sibirica*, Himalayan Thar *Hermitragus jemlahicus*, Asiatic Brown Bear *Ursus arctoides*, Tibetan Wolf *Canis lupus chanco*, Indian or Royle's Pika *Ochotona roylei* and Snow Leopard *Uncia uncia*. Some of the pheasant species which are very important in the State, include the Himalayan Monal *Lophophorus impejanus*, Western Tragopan *Tragopan melanocephalus*, Koklass Pheasant *Pucrasia macrolopha* and snowcocks *Tetraogallus* spp.

The average rainfall in the State is 1,800 mm. The mean annual temperature ranges between 20 °C to 22.5 °C.

The total population of the State in 2001 was 6.08 million of which 90.2% is rural and 9.8% is urban. The population density is 109 persons per sq. km. (2001 census). In 2011 it rose to 6.86 million of which 89.9% is still rural population while urban population is merely 10.1%. Population density is 123 sq. km (2011 census).

Important Bird Areas in Himachal Pradesh





DEVINDER SINGH DHADWAL

More than 100,000 waterbirds, including nearly 20,000 Bar-headed Goose *Anser indicus* are found in and around Pong Dam. This is the largest concentration of the species in the world

Vegetation

There are six major forest types in Himachal Pradesh: Tropical Dry Deciduous, Sub-tropical Pine, Sub-tropical Dry Evergreen, Himalayan Moist Temperate, Himalayan Dry Temperate, and Sub-alpine and Alpine. By legal status, the reserved forest constitutes 5.1%, the protected forest 89.2% and the unclassified forest 5.7% (Ministry of Environment and Forests 2001).

Out of 55,673 sq km geographical area of Himachal Pradesh, 14,683 sq km is forested. Of this 21.9% is very dense forest, 43.4% is moderate dense forest and 34.7% is open forest (Ministry of Environment and Forests 2013). Forest cover in Himachal Pradesh has increased in the last two decades from 21.16% to 26.37% states Forest Survey of India (2013). The report also says that the area of open forest has increased since 2011.

PROTECTED AREAS IN HIMACHAL PRADESH

The Himachal Pradesh government took up Rationalization of PA Boundaries which has resulted an increase of national parks from two to five and decrease in sanctuaries from 32 to 26. The overall area of PAs has gone up by 1,000 sq km (from earlier 7400 to now 8400 sq km) (Sanjeeva Pandey, *per. comm.*, 2015).

IBAS OF HIMACHAL PRADESH

Previously there were two national parks and 32 wildlife sanctuaries in the state. In the year 2011, three more national parks were identified viz. Khirganga National Park (Kullu), Inderkila National Park (Kullu) and Simbalbara National Park (Sirmour) (Sharma & Kumar

2012). The Great Himalayan National Park and the Pin Valley National Park have been identified as IBAs, and of the 26 wildlife sanctuaries, 24 are IBAs. Two non-protected areas are also considered as IBAs.

AVIFAUNA

Himachal Pradesh is extremely important for the protection of many species of pheasants and forest birds. Its six major forest types have Western Himalayan species, some with significant populations. A total of 390 species of birds have been identified till now from the State (Grimmett and Inskipp 2003). Seven globally threatened species are found in the State. The two vulture and two eagle species are widely found but the two pheasant species (Cheer Pheasant *Catreus wallichii* and Western Tragopan *Tragopan melanocephalus*) have restricted range, both in altitude and habitat. The Wood Snipe *Gallinago nemoricola* classified as Vulnerable (BirdLife International 2001) also had a wide distribution in the Himalayas based on old shooting records (Ali and Ripley 1987). Only few recent records are available after the prohibition of sport-hunting in India. It is reported only from Dhauladhar WLS, but is likely to be found in many more areas.

Himachal Pradesh lies in the Western Himalayas Endemic Bird Area (EBA 128). Eleven species are confined to this EBA (Stattersfield *et al.* 1998), out of which ten are known to occur in this State with confirmed records. They are: Western Tragopan, Cheer Pheasant, Brook's Leaf Warbler *Phylloscopus subviridis*, Tytler's Leaf Warbler *Phylloscopus tytleri*, Kashmir Flycatcher *Ficedula subrubra* (vagrant), White-cheeked Tit *Aegithalos leucogenys*, White-

IBAs of HIMACHAL PRADESH		
IBA site codes	IBA site names	IBA criteria
IN-HP-01	Bandli Wildlife Sanctuary	A1, A2
IN-HP-02	Chail Wildlife Sanctuary	A1, A2, A3
IN-HP-03	Churdhar Wildlife Sanctuary	A3
IN-HP-04	Daranghati Wildlife Sanctuary	A1, A2
IN-HP-05	Dhauladhar Wildlife Sanctuary	A1, A2, A3
IN-HP-06	Gamgul Siabehi Wildlife Sanctuary	A1, A2, A3
IN-HP-07	Govind Sagar And Nainadevi Wildlife Sanctuaries	A1, A3
IN-HP-08	Great Himalayan National Park	A1, A2, A3
IN-HP-09	Kais Wildlife Sanctuary	A1, A2
IN-HP-10	Kalatop Khajjar Wildlife Sanctuary	A1, A2
IN-HP-11	Kanawar Wildlife Sanctuary	A1, A2
IN-HP-12	Kibber Wildlife Sanctuary	A3
IN-HP-13	Kugti Wildlife Sanctuary	A1, A2, A3
IN-HP-14	Lippa Asrang Wildlife Sanctuary	A3
IN-HP-15	Majathal Wildlife Sanctuary	A1
IN-HP-16	Manali Wildlife Sanctuary	A1, A2, A3
IN-HP-17	Nargu Wildlife Sanctuary	A1, A3
IN-HP-18	Pin Valley National Park	A3
IN-HP-19	Pong Dam Lake Wildlife Sanctuary	A1, A4i, A4iii
IN-HP-20	Rupi Bhaba Wildlife Sanctuary	A1, A2
IN-HP-21	Sangla (Rakchham Chitkul) Wildlife Sanctuary	A1, A2, A3
IN-HP-22	Sarah Valley, Lower Dharamshala	A1, A3
IN-HP-23	Sechu Tuan Nala Wildlife Sanctuary	A1
IN-HP-24	Shikari Devi Wildlife Sanctuary	A1, A2, A3
IN-HP-25	Shimla Water Catchment Wildlife Sanctuary	A1, A2, A3
IN-HP-26	Talra Wildlife Sanctuary	A1, A3
IN-HP-27	Tirthan Wildlife Sanctuary	A1, A2, A3
IN-HP-28	Inderkilla National Park	A1, A2, A3
IN-HP-29	Khirganga National Park	A1, A2
IN-HP-30	Lambri Forest (Banjar Forest Division)	A1, A2
IN-HP-31	Simbalbara National Park	A1

throated Tit *Aegithalos niveogularis*, Kashmir Nuthatch *Sitta cashmirensis*, Spectacled Finch *Callacanthus burtoni* and Orange Bullfinch *Pyrrhula aurantiaca*. Only Himalayan or Mountain Quail *Ophrysia superciliosa*, which was anyway not reported from Himachal Pradesh, is missing from the EBA list of the State. These restricted range species are confined to the Western Himalayas of Himachal Pradesh on an elevation between 1,500 to 3,600 m in the Temperate Coniferous/Broadleaf Forest, Sub-alpine Forest and Montane Grassland (Stattersfield *et al.* 1998).

SPECIES FOR WHICH HIMACHAL PRADESH IS IMPORTANT

Himachal Pradesh is very important for the conservation of the following three Globally Threatened species:

Slender-billed Vulture *Gyps tenuirostris* Critically Endangered

This newly recognized species is classified as Critical because it has suffered an extremely rapid population decline, particularly across the Indian subcontinent (BirdLife International 2014). In Himachal Pradesh, it is reported from Gobind Sagar and Naina Devi WLS, Sarah Valley and Lower Dharamshala (J. W. den Besten *per comm.* 2003).

Western Tragopan *Tragopan melanocephalus* Vulnerable

This species is classified as Vulnerable because its sparsely distributed, small population is declining and becoming increasingly fragmented in the face of continuing forest loss and degradation throughout its restricted range (BirdLife International 2014). This bird is known

Sr. No.	Name of Protected Area	Previous Notified Area (Km2) On ground (Km2)	Area Excluded (Km2)	Area included (Km2)	Area after Rationalization (Km2)	Status of Final Notification
1	2	3	4	5	6	7
National Parks						
1	Great Himalayan National Park	754.4	754.4	0	151	905.4
2	Pin Valley	675	675	0	0	675
3	Khirganga	0	0	0	710	705
4	Inderkila	0	0	0	104	94
5	Simbalbara	19	19	0	8.88	27.88
	Total	1448.4	1448.4	0	973.88	2407.28
Wildlife Sanctuaries						
1	Bandli	41	32.11	0	0	32.11
2	Chail	109	108.53	92.53	0	16
3	Chandertal	38.56	38.56	0	0	38.56
4	Churdhar	66	66.7	11.18	0	55.52
5	Daranghati I & II	167	48.25	4.62	127.87	171.5
6	Dhauladhar	944	1117.86	135	0	982.86
7	Gamgul Siyabehi	109	109	15.6	15	108.4
8	Kias	13.65	12.61	0	0	12.61
9	Kalatop-Khajjiar	69	69	51.83	0	17.17
10	Kanawar	54.27	62.49	14.5	59.3	107.29
11	Khokhan	13.36	19.5	7.51	2.95	14.94
12	Kibber	1400	1400	46.88	867	2220.12
13	Kugti	379	324.3	8.81	90	405.49
14	Lippa Asrang	31	31	0	0	31
15	Majathal	40	39.39	8.53	0	30.86
16	Manali	29	29	0	0	29
17	Nagru	278	278.38	209.4285	63.413	132.3731
18	Pong Dam	307	253.9	46.31	0	207.59
19	Rakchham Chitkul	304	304	0	0	304
20	Renukaji	4	4	0.63	0.5	3.87
21	Rupi Bhaba	503	503	0	0	503
22	Sech Taun Nalla	103	330	52.98	113.27	390.29
23	Shimla Water Catchment	10	10	0	0	10
24	Shikari Devi	213.51	112.94	83	0	29.94
25	Talra	40	40	0	6.48	46.48
	Tirthan	61	61	61	0	Merger with GHNP
26	Tundah	64	83	19	0	64
Total	5581.35	5678.5286	1059.3385	1345.783	5964.9731	
Conservation Reserve						
1	Shilli	2	2.14	0.65	0	1.49
2	Naina Devi	123	64.74	47.73	0	17.01
3	Darlaghat	6	6	5.33	0	0.67
	Total	131	72.88	53.71	0	19.17
	Grand Total	7,160.75	7,199	1,113	23,220	8,391.42

LIST OF THREATENED BIRDS WITH IBA SITE CODES

CRITICALLY ENDANGERED		
White-rumped Vulture	<i>Gyps bengalensis</i>	IN-HP-02, 05, 07, 15, 19, 22, 31
Slender-billed Vulture	<i>Gyps tenuirostris</i>	IN-HP-07, 19, 22, 31
Red-headed Vulture	<i>Aegypius calvus</i>	IN-HP-02, 05, 15, 31
ENDANGERED		
Egyptian Vulture	<i>Neophron percnopterus</i>	IN-HP-07, 15, 19, 31
Saker Falcon	<i>Falco cherrug</i>	IN-HP-16, 28
Black-bellied Tern	<i>Sterna acuticauda</i>	IN-HP-19
VULNERABLE		
Asian Woollyneck	<i>Ciconia episcopus</i>	IN-HP-19
Lesser White-fronted Goose	<i>Anser erythropus</i>	IN-HP-19
Greater Spotted Eagle	<i>Clanga clanga</i>	IN-HP-05, 19
Eastern Imperial Eagle	<i>Aquila heliaca</i>	IN-HP-05, 16, 19, 28
Indian Spotted Eagle	<i>Clanga hastata</i>	IN-HP-05, 13
Pallas's Fish-eagle	<i>Haliaeetus leucogaster</i>	IN-HP-19
Western Tragopan	<i>Tragopan melanocephalus</i>	IN-HP-04, 05, 06, 08, 09, 11, 16, 20, 21, 23, 26, 27, 28, 29, 30
Cheer Pheasant	<i>Catreus wallichii</i>	IN-HP-01, 02, 05, 06, 08, 09, 10, 11, 13, 15, 20, 24, 25, 26, 27, 29
Wood Snipe	<i>Gallinago nemoricola</i>	IN-HP-05
Sarus Crane	<i>Grus antigone</i>	IN-HP-19
Indian Skimmer	<i>Rynchops albigollis</i>	IN-HP-19
NEAR THREATENED		
Oriental Darter	<i>Anhinga melanogaster</i>	IN-HP-19
Painted Stork	<i>Mycteria leucocephala</i>	IN-HP-19, 31
Black-headed Ibis	<i>Threskiornis melanocephalus</i>	IN-HP-19
Ferruginous Duck	<i>Aythya nyroca</i>	IN-HP-19
Pallid Harrier	<i>Circus macrourus</i>	IN-HP-02, 31
Himalayan Griffon	<i>Gyps himalayensis</i>	IN-HP-04, 05, 07, 09, 10, 13, 14, 15, 18, 19, 21, 22, 23, 24, 26, 27, 29, 30,
Cinereous Vulture	<i>Aegypius monachus</i>	IN-HP-05, 08, 10, 15, 16, 18, 19, 28, 29, 30
Bearded Vulture	<i>Gypaetus barbatus</i>	IN-HP-05, 12, 15, 18, 29, 30
River Tern	<i>Sterna aurantia</i>	IN-HP-19
River Lapwing	<i>Vanellus duvaucelii</i>	IN-HP- 07, 19
Great Thick-knee	<i>Esacus recurvirostris</i>	IN-HP-19
Eurasian Curlew	<i>Numenius arquata</i>	IN-HP-19
Black-tailed Godwit	<i>Limosa limosa</i>	IN-HP-19
Blossom-headed Parakeet	<i>Psittacula roseata</i>	IN-HP-07
Alexandrine Parakeet	<i>Psittacula eupatria</i>	IN-HP-07, 09, 19, 31
European Roller	<i>Coracias garrulus</i>	IN-HP-31
Tytler's Leaf-warbler	<i>Phylloscopus tytleri</i>	IN-HP-05
ENDEMIC BIRD AREA 128: WESTERN HIMALAYAS		
Cheer Pheasant	Catreus wallichii	IN-HP-01, 02, 05, 06, 08, 09, 10, 11, 13, 15, 20, 24, 25, 26, 27, 29
Western Tragopan	Tragopan melanocephalus	IN-HP-04, 05, 06, 08, 09, 11, 16, 20, 21, 23, 26, 27, 28, 29, 30
Tytler's Leaf-warbler	Phylloscopus tytleri	IN-HP-05
Red-browed Finch or Spectacled Finch	Callacanthus burtoni	IN-HP-08, 29, 30
White-cheeked Tit	Aegithalos leucogenys	IN-HP-08, 11, 20, 27, 29 30
White-throated Tit	Aegithalos niveogularis	IN-HP-08, 20, 29, 30
Orange Bullfinch	Pyrrhula aurantiaca	IN-HP-08, 20, 29

as *Jujurana* in Kullu district of Himachal Pradesh means 'king of the birds'. Western Tragopan is also the state bird of Himachal Pradesh. From Himachal Pradesh it has been reported from Daranghati Wildlife Sanctuary (Singh *et al.* 1990; Pandey 1994 and Singh & Tu 2008), Dhauladhar

Wildlife Sanctuary and McLeod Ganj (Bose *et al.* 1989, Knox and Walters 1994), Gamgul Siahbehi Wildlife Sanctuary (Singh *et al.* 1990), Great Himalayan National Park (Singh *et al.* 1990, Gaston *et al.* 1993, Gaston and Garson 1992, Pandey 1993), Kais Wildlife Sanctuary (Knox



Western Tragopan *Tragopan melanocephalus*



Himalayan Monal *Lophophorus impejanus*



Nepal Wren-babbler *Phoenicurus phoenicurus*



Wedge-tailed Green-pigeon *Treron sphenurus*

Nearly 400 species of birds have been identified in Himachal Pradesh. The IBAs of Himachal Pradesh are very important for the protection of pheasants and Himalayan forest birds.

and Walters 1994; Singh *et al.* 1990), Kanawar Wildlife Sanctuary (Singh *et al.* 1990; Pandey 1993), Lippa Asrang Sanctuary (Singh *et al.* 1990), Manali Wildlife Sanctuary (Wynter-Blyth 1951), Nargu Sanctuary (Pandey 1993), Ruppi Bhabha Wildlife Sanctuary (Singh *et al.* 1990), Sangla (Raksham Chitkul) Wildlife Sanctuary, Sangla (Raksham Chitkul) Wildlife Sanctuary (Narang 1993), Sechu Tuan Nala Wildlife Sanctuary (Singh *et al.* 1990), Talra Wildlife Sanctuary (Singh *et al.* 1990), Tirthan Wildlife Sanctuary

[part of the Great Himalayan National Park] (Singh *et al.* 1990; Pandey 1993; Gaston and Garson 1992). Ramesh *et al.* (2008) radio tagged one Western Tragopan female and Miller (2010) recorded 32 birds during a survey in Great Himalayan National Park.

Chamba district has a sizeable population of this bird (Shahid Bashir *pers. comm.* 2003). The important areas in Chamba are Makhan Nalla, Monda Nala (Tak 1987, Chauhan and Sharma 1991), Dalli, c. 28 km northwest of



UDAYAN RAO PAWAR

Himachal Pradesh is known for its high-mountain ungulates such as the Asiatic Ibex *Capra sibirica*



SANJAY KUMAR UNIYAL

IBAs such as Kugti WLS are representative of Biome 7: Sino-Himalayan Temperate Forest, and Biome-5: Eurasian High Montane

Chamba (Narang 1993), Ghrotu Kotha and Gharaatbada Reserve Forests, (Jandrotia *et al.* 1996); and the Kalatop and Khajjiar Sanctuary (Singh *et al.* 1990), but the presence there appears doubtful (Javed *et al.* 1999).

Cheer Pheasant *Catreus wallichii* Vulnerable

This pheasant's small population is naturally fragmented because it lives in small patches of successional grassland. Human population pressure, hunting and changing patterns of land use are resulting in its decline, classifying it as Vulnerable (BirdLife International 2001).

From Himachal Pradesh it is reported from the following sites: Gamgul Siahbehi Sanctuary (Singh *et al.* 1990); Sara Reserve Forest, (Gaston *et al.* 1981), Kugti Sanctuary (Singh *et al.* 1990), Manali Sanctuary (Gaston *et al.* 1981; Singh *et al.* 1990), Kalatop and Khajjiar Sanctuary (Khajjiar-Kalatope Wildlife Sanctuary), (Gaston *et al.* 1981); Kais Sanctuary (Singh *et al.* 1990); Kanawar Sanctuary, (Gaston *et al.* 1981; Singh *et al.* 1990); Nargu Sanctuary (Singh *et al.* 1990, Gaston *et al.* 1993), Tirthan Sanctuary (Gaston *et al.* 1981; Singh *et al.* 1990), Shikari Devi Sanctuary, (Singh *et al.* 1990); Bandli Sanctuary (Singh *et al.* 1990), Daranghati (Sharma *et al.* 1990), Majathal Wildlife Sanctuary (Gaston *et al.* 1981; Garson 1983, Mishra 1996), Talra Sanctuary (Singh *et al.* 1990), Chail Wildlife Sanctuary (Gaston and Singh 1980, Gaston *et al.* 1981; Kalsi 1999) and Churdar Wildlife Sanctuary.

SOME UNUSUAL RECORDS FROM HIMACHAL PRADESH

Khacher (1994) recorded one Ashy Minivet *Pericrocotus divaricatus* from the upper end of the Beas Valley. Gaston & Pandey (1987) observed two Red-necked Grebes *Podiceps grisegena* in Pong Dam Lake. Dhadwal (2013) saw two unusual birds in Pong Dam Lake which were photographed and later identified as Whooper Swan *Cygnus cygnus*, the last known record of this species was from 1909.

THREATS AND CONSERVATION ISSUES

In Himachal Pradesh, deforestation is not an acute problem as compared to other neighbouring states. The forest cover remains extensive and relatively stable, although destruction of the understorey through overgrazing by livestock is a major problem (IUCN 1993) and some development projects such as roads and dams also affect some of the IBA sites (Virendra Sharma *pers. comm.* 1999). There are few IBAs where a viable population of the Western Tragopan and Cheer Pheasants are found. Because of habitat degradation, however, they remain only in pockets as described by BirdLife International (2001). The Great Himalayan National Park is an important IBA site where a sizeable population of the Western Tragopan and the Cheer Pheasant is found. Similarly, the Majathal Wildlife Sanctuary is an important IBA for the Cheer Pheasant.

Some of the key threats are expansion of cultivation, illegal logging, overgrazing by livestock, conversion to

agriculture and plantations, weaknesses in protected area management, hunting of wildlife and trapping.

New roads, dams, mines, buildings and other developments strongly contribute to habitat loss in the Western Himalayas, damaging forests, both directly and indirectly and by displacing people into forest areas (BirdLife International 2003). Construction of roads in highland areas may cause landslips, and provide improved access to remote montane habitats for shifting cultivators, illegal loggers, hunters and harvesters of forest products (BirdLife International 2003). The construction of Parvati Hydro-electric Project in the vicinity of Great Himalayan National Park has led to decrease in abundance of three pheasants viz. Cheer Pheasant, Koklass Pheasant and Himalayan Monal (Jolly 2013).

Hydro-electric power projects are a major environmental concern of the State. On one side they generate electricity and bring prosperity in urban areas, they have huge impact on the local communities and wildlife. Very large number of hydro-electric power projects are under construction and also planned. For example, 200 MW project in the Bara Bangal wildlife reserve area of Kangra district will submerge only 21.46 hectares of forest lands in the wildlife reserve for setting up the power project, but will have a huge impact during construction and post-construction period. The projects diversion dam is proposed just below Bara Bangal village on River Ravi, from where a 7 km long head race tunnel is to be constructed to a power house near Nayagram in Chamba. It has been allocated to Malana Power Corporation, a private power producer who already operate two power projects in the state. It would cut right through the heart of this untouched forest area and would involve blasting, dumping debris, road construction and entry of thousands of labourers with all the attendant poaching and deforestation. Incidentally, the catchment of Bara Bangal area is source of water to Ravi River. Besides large projects, according to government sources, as many as 294 mini and micro hydropower projects were sanctioned in public and private sectors between January 01, 2008 and 31, December 2009.

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BANDLI WILDLIFE SANCTUARY

IBA Site Code : IN-HP-01

State : Himachal Pradesh

District : Mandi

Coordinates : 31° 27' 18.325" N, 76° 55' 45.444" E

Ownership : State

Area : 3,211 ha

Altitude : 762–1,260 msl

Rainfall : 1,544 mm

Temperature : 1 °C to 35 °C

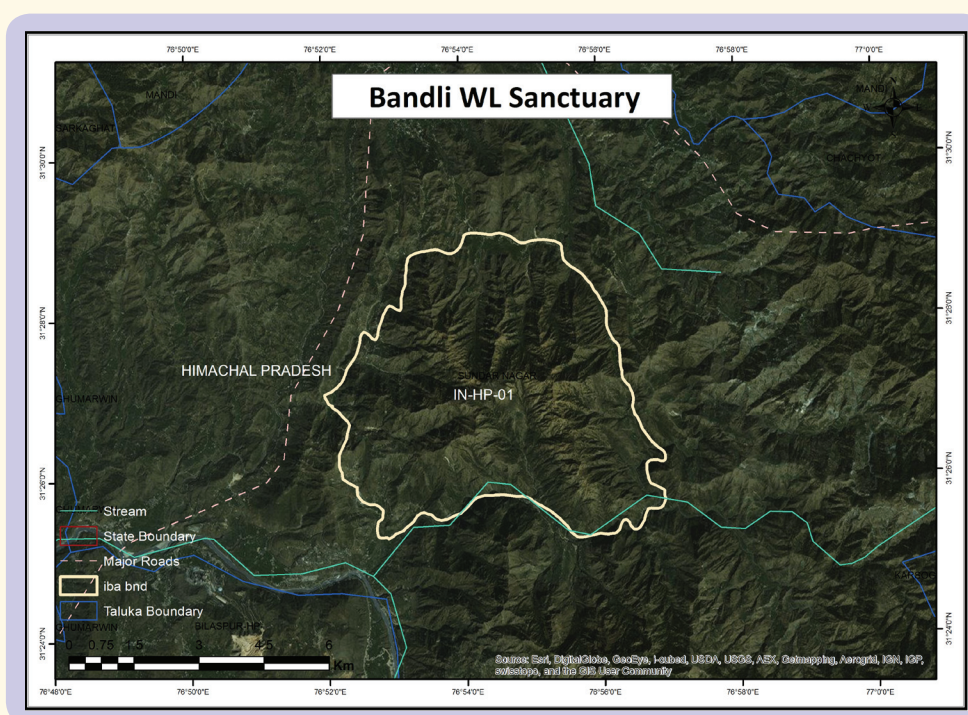
Biogeographic Zone : Himalaya

Habitats : Sub Alpine Forest, Montane Wet Temperate Forest

IN-HP-01

IBA CRITERIA: A1 (Threatened species), A2 (Endemic Bird Area 128: Western Himalayas). Data Deficient.

PROTECTION STATUS: Wildlife Sanctuary, established in March 1962.



GENERAL DESCRIPTION

This small sanctuary in Mandi district has been in the news due to the State Government's plan to establish a large cement factory about 500 m from the boundary. Bandli was a Reserve Forest until 1962, when it was first notified as a Sanctuary. After the enactment of the Wildlife Protection Act, 1972, final notification took place in 1974. It is located about 7 km from Sundarnagar town. The Sanctuary was declared mainly to protect Cheer Pheasant *Catreus wallichii*, which had been exterminated from many nearby areas due to hunting. The sanctuary is under heavy pressure due to its proximity to villages and towns.

Singh *et al.* (1990) identified only two major forest types: Himalayan Subtropical Pine Forest and Ban Oak Forest.

AVIFAUNA

This sanctuary helps to protect a small surviving population of Cheer Pheasant. No detailed study on avifauna

has been conducted, except for surveys of pheasants.

The Forest Department in 2011 conducted a Cheer Pheasant survey, on the basis of which they concluded that the bird population is flourishing.

This IBA comes under Western Himalaya Endemic Bird Area (EBA 128) (Stattersfield *et al.* 1998) and Sino-Himalayan Subtropical Forest (BirdLife International, undated). However, as we do not have the checklist of birds of this site, we do not know how many restricted-range and biome restricted assemblages are found in this IBA. Besides studies on the globally Threatened Cheer Pheasant to know its status and distribution in this site, detailed studies on the general avifauna are also required. It is a Data Deficient site.

OTHER KEY FAUNA

Leopard *Panthera pardus* is quite common and a major cause of concern to livestock owners. Asiatic Black Bear *Ursus thibetanus* is also found here, but it confines itself



K.S. SAUWAN

Although Bandli Wildlife Sanctuary is Data Deficient as far as bird studies are concerned, the presence of Cheer Pheasant *Catreus wallichii*, a Vulnerable species, qualifies it as an IBA

VULNERABLE

Cheer Pheasant

Catreus wallichii

ENDEMIC BIRD AREA 128: WESTERN HIMALAYAS

Cheer Pheasant

Catreus wallichii

to forest and grassland areas. Barking Deer *Muntiacus muntjak* and Goral *Naemorhedus goral* are the major prey of Leopard. Himalayan Yellow-throated Marten *Martes flavigula* are the major predators of Cheer Pheasant and other smaller prey. Common Langur *Semnopithecus entellus* and Rhesus Macaque *Macaca mulatta* are the non-human primates in the IBA.

LAND USE

- Nature conservation

THREATS AND CONSERVATION ISSUES

- Poaching
- Human settlement
- Forest fires
- Denotification
- Grazing
- Cement factory project

Besides poaching, livestock grazing and forest fires plague most of the sanctuaries of northern India. The Bandli Sanctuary is under the threat of denotification by the Himachal Government, which intends to construct a large cement factory 500 m away from the Sanctuary border. Earlier in 1992, the proposal to set up a cement plant was rejected by the Ministry of Environment, Forests and

Climate Change as the proposed mining site would have disturbed the Sanctuary. In 2001, the State Government revived the plan with a proposal to denotify half the Sanctuary to facilitate the project. The residents have been opposing the cement plant proposal since 1992, and have now formed several environmental protection groups to save the Sanctuary. It has been pointed out that a large number of people in Mandi are likely to be adversely affected by the pollution from the cement plant. There are fears that water channels will dry up or become polluted, water mills will be rendered useless and cropping patterns and yields will be affected. The tourism industry is also opposing the cement plant project in such sylvan surroundings.

KEY CONTRIBUTORS

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Links:

Source: <http://neonews.in/environmentview.php?card=51&id=34>
(As accessed on November 10, 2014)

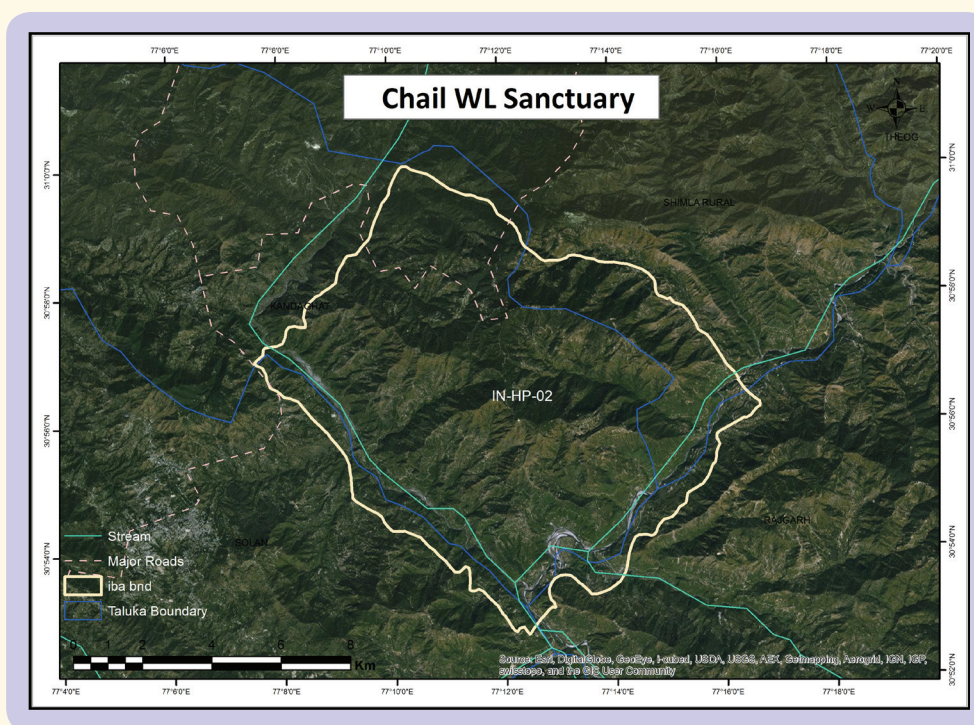
CHAIL WILDLIFE SANCTUARY

IN-HP-02

IBA Site Code	: IN-HP-02	Altitude	: 701–2,408 msl
State	: Himachal Pradesh	Rainfall	: Not available
District	: Solan, Shimla	Temperature	: -4 °C to 28 °C
Coordinates	: 77° 11' 26.423" E, 30° 57' 1.714" N,	Biogeographic Zone	: Himalaya
Ownership	: State	Habitats	: Sub-alpine Forest, Montane Grassy Slopes, Sub-tropical Broadleaf Hill Forest
Area	: 1,601 ha		

IBA CRITERIA: A1 (Threatened species), A2 (Endemic Bird Area 128: Western Himalaya), A3 (Biome 7: Sino-Himalayan Temperate Forest; Biome 8: Sino-Himalayan Subtropical Forest)

PROTECTION STATUS: Wildlife Sanctuary, established November, 1985.



GENERAL DESCRIPTION

Chail Wildlife Sanctuary lies in Solan and Shimla districts. Formerly, it was the private game reserve of the Maharaja of Patiala. In spite of degradation, it is still one of the best sanctuaries for the Cheer Pheasant *Catreus wallichii*.

In 2013, 92.53 sq. km of the sanctuary was denotified under the process of rationalisation of the boundaries of PAs in the state. In this process, a total of 84 villages have been excluded from the protected area. However, the Cheer Pheasant breeding project near Chail Palace Hotel is still a part of the sanctuary, in order to ensure that the project is not disturbed.

The forest cover of the sanctuary includes Himalayan Sub-tropical Pine Forest, Ban Oak Forest, and Moru Oak Forest, according to the classification by Champion &

Seth (1968). The dominant forest tree is Ban Oak *Quercus incana*, mixed with Chir Pine *Pinus roxburghii* at lower altitudes. Rhododendron *Rhododendron arboreum* forms pure stands in places and Cedar *Cedrus deodara* and Blue Pine *Pinus wallichiana* have been planted in some areas. There is little mature forest, and much secondary growth due to disturbance (Gaston & Singh 1980). The habitat map in Garson (1983) shows that the forest is largely confined to the northern half of the sanctuary. Around 418 ha were planted with Pine, Oak, Cedar, and *Robinia* up to 1984 (Singh *et al.* 1990).

AVIFAUNA

At least 139 bird species are reported from the site (Naim Akhtar, *pers. comm.* 2003), including five species of

CRITICALLY ENDANGERED

White-rumped Vulture	<i>Gyps bengalensis</i>
Red-headed Vulture	<i>Aegypius calvus</i>

VULNERABLE

Cheer Pheasant	<i>Catreus wallichii</i>
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NEAR THREATENED

Pallid Harrier (?)	<i>Circus macrourus</i>
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ENDEMIC BIRD AREA 128: WESTERN HIMALAYA

Cheer Pheasant	<i>Catreus wallichii</i>
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BIOME 7: SINO-HIMALAYAN TEMPERATE FOREST

Rufous-breasted Accentor	<i>Prunella strophciata</i>
Chestnut Thrush	<i>Turdus rubrocanus</i>
Blue-capped Redstart	<i>Phoenicurus caeruleocephalus</i>
Streaked Laughingthrush	<i>Garrulax lineatus</i>
Variegated Laughingthrush	<i>Garrulax variegatus</i>
Rufous Sibia	<i>Heterophasia capistrata</i>
Green-backed Tit	<i>Parus monticolus</i>
Bar-tailed Tree-creeper	<i>Certhia himalayana</i>
Himalayan White-browed Rosefinch	<i>Carpodacus thura</i>

BIOME 8: SINO-HIMALAYAN SUBTROPICAL FOREST

Slaty-headed or Himalayan Parakeet	<i>Psittacula himalayana</i>
Himalayan Bulbul	<i>Pycnonotus leucogenys</i>
Grey-winged Blackbird	<i>Turdus bouboul</i>
Striated Prinia	<i>Prinia criniger</i>
Black-throated Tit	<i>Aegithalos concinnus</i>
Black-headed Jay	<i>Garrulus lanceolatus</i>
Grey Treepie	<i>Dendrocitta formosae</i>

pheasants, i.e. Cheer, Koklass *Pucrasia macrolopha*, Kaleej *Lophura leucomelanos*, Indian Peafowl *Pavo cristatus*, and Red Junglefowl *Gallus gallus*. While Cheer Pheasant occurs only in grassland, Kaleej and Koklass are found in oak forests.

This IBA is extremely important for the protection of the globally Threatened Cheer Pheasant. In the late 1970s, Gaston & Singh (1980) and Gaston *et al.* (1981) estimated 40 to 60 pairs, while in March 1983, Garson (1983) estimated a minimum of 32 pairs. Sharma *et al.* (1990) conducted further surveys in March 1987, and recently Kalsi (1999) surveyed Cheer Pheasant in Himachal Pradesh between March and June, and found many pairs in Chail. The most recent work on this species is by Akhtar & Narang (2002), who found “high abundance of Cheer pheasant” in Chail. It is widely distributed in places called Blossom and Khari-un. They also found one more grassland site near Bhagairh village.

This IBA lies in the Western Himalaya Endemic Bird Area (EBA) (Stattersfield *et al.* 1998), and Biome 7 (Sino-Himalayan Subtropical Forest) and Biome 8 (Sino-Himalayan Subtropical Forest) (BirdLife International, undated). Eleven species are considered to be restricted-range species in this EBA, and in Chail WLS, only one (Cheer Pheasant) has been identified till now. Detailed studies are required here to find out whether other restricted-range species occur, as the habitat and altitude appear to be suitable for some of them.



DHRITIMAN MUKHERJEE

Although Chail Wildlife Sanctuary was partially denotified in 2013, it still retains subtropical broadleaf hill forest, montane grassy slopes, and subalpine forest. It has nearly 140 bird species including the Vulnerable Cheer Pheasant

Major species of the Sino-Himalayan Temperate Forest seen in Chail are Bar-tailed Treecreeper *Certhia himalayana*, Rufous Sibia *Heterophasia capistrata*, Northern Red-flanked Bush-robin *Tarsiger cyanurus*, Blue-capped Redstart *Phoenicurus caeruleocephalus*, Green-backed Tit *Parus monticolus*, and Himalayan White-browed Rosefinch *Carpodacus thura*. None of these are threatened, but they represent the Biome 7 assemblages of broadleaf deciduous and coniferous forests. The Plain-backed Thrush *Zoothera mollissima*, listed by BirdLife International (undated) in Biome 5 (Eurasian High Montane) is also seen in Chail, between 2,700 and 4,000 m, wintering between 900 to 2,600 m (Ali & Ripley 1987). The birds representing Biome 8 are: Himalayan Slaty-headed Parakeet or Himalayan Parakeet *Psittacula himalayana*, Black-headed Jay *Garrulus lanceolatus*, Himalayan Bulbul *Pycnonotus leucogenys*, and Grey-winged Blackbird *Turdus boulboul*.

OTHER KEY FAUNA

Leopard *Panthera pardus* is the main predator, and has for its prey ungulates such as Indian Muntjac or Barking Deer *Muntiacus muntjak*, Sambar *Rusa unicolor*, and Himalayan Brown Goral *Naemorhedus goral*. Goral occurs in very good numbers in Chail, as evident by the encounter rate of seven animals/km walk (S. Sathyakumar, pers. comm. 2002). The European Red Deer *Cervus elaphus* was introduced more than half a century ago by the former Maharaja of Patiala (Singh et al. 1990), but none were sighted during a census in 1988 (S. Pandey, pers. comm.). Other species include Asiatic Black Bear *Ursus thibetanus*, Wild Boar *Sus scrofa*, Common Langur *Semnopithecus schistaceus*, and Black-naped or Indian Hare *Lepus nigricollis*.

LAND USE

- Nature conservation and research
- Tourism and recreation
- Urban transport

THREATS AND CONSERVATION ISSUES

- Forest fires
- Livestock grazing
- Firewood collection
- Disturbance to birds

The sanctuary area is surrounded by more than 120 villages, and Chail town. The surrounding area is also densely populated. Therefore, this small sanctuary is under tremendous human pressure due to fuel wood collection, livestock grazing, quarrying, and other unfavourable activities. Various government departments such as the Public Works Department, Himachal Pradesh Tourism Department, Military Engineering Services,

Himachal Pradesh Forest Department, and Himachal Pradesh Horticulture Department are located within the sanctuary.

The present smaller size of the sanctuary is because of exclusion of all the villages and Chail town. The existing Wildlife Sanctuary is very important for the in situ conservation of Cheer pheasant.

Two pheasant breeding centres, at Karium and Blossom, are located within the sanctuary where captive breeding of Cheer, Kaleej, and Red Junglefowl are being attempted.

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Links:

- <http://www.tribuneindia.com/2012/20120215/himachal.htm#8> (As accessed on November 10, 2014).
- <http://timesofindia.indiatimes.com/city/chandigarh/775-Himachal-villages-excluded-from-sanctuary-areas/articleshow/26435686.cms> (As accessed on November 10, 2014).

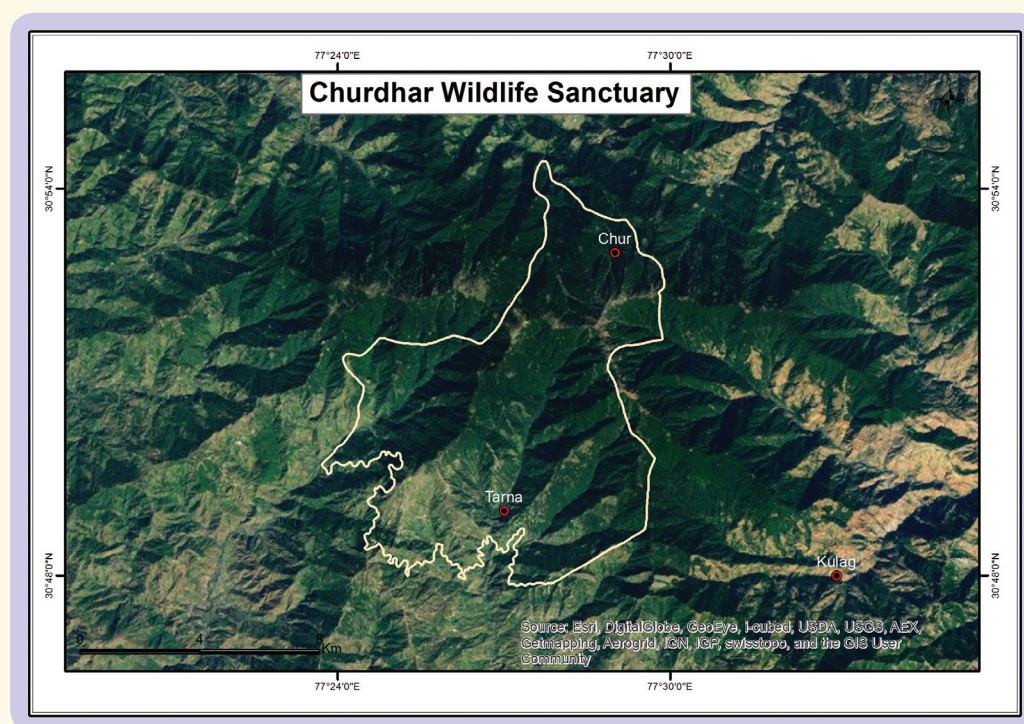
CHURDHAR WILDLIFE SANCTUARY

IN-HP-03

IBA Site Code	: IN-HP-03	Altitude	: 2,000–3,647 msl
State	: Himachal Pradesh	Rainfall	: Not available
District	: Sirmaur	Temperature	: Not available
Coordinates	: 30° 51' 28.725" N, 77° 27' 0.79" E	Biogeographic Zone	: Himalaya
Ownership	: State	Habitats	: Sub-tropical Pine Forest, Alpine Moist Pasture
Area	: 5,552 ha		

IBA CRITERIA: A3 (Biome 7: Sino-Himalayan Temperate Forest), Data Deficient, EBA 128??

PROTECTION STATUS: Wildlife Sanctuary, established November, 1985.



GENERAL DESCRIPTION

The sanctuary gets its name from Chur Peak, atop which sits a majestic statue of Lord Shiva, commanding a breathtaking view of the valleys and forests below (Singh *et al.* 1990). Churdhar and the nearby temples are important pilgrimage sites. Three main forest zones could be demarcated in Churdhar WLS: Alpine Pasture, Kharsu Oak Forest, and Western Mixed Coniferous Forest. This forest classification is based on Champion & Seth (1968). Plantations of Deodar *Cedrus deodara*, Oak *Quercus* sp., and other species have been established by the Forest Department.

In 2013, the Government of India denotified 1,118 ha from the previous 6,670 ha sanctuary comprising five villages, namely Bateori, Satani, Nohra, Chouras, and Kanda. Hence, after rationalization, the area of the sanctuary is 5,552 ha.

AVIFAUNA

No study on the avifauna has been conducted in this sanctuary, but Singh *et al.* (1990) provided a list of 30 bird species recorded here. The IBA does not have significant populations of any globally Threatened species, but the temperate forests of Churdhar still have good habitats for the Himalayan Monal *Lophophorus impejanus*, Koklass Pheasant *Pucrasia macrolopha*, and other species typical of Western Mixed Coniferous Forest and Alpine Pastures (S. Pandey, *pers. comm.* 2002).

This site lies in the Western Himalaya Endemic Bird Area (EBA 128). In this EBA, 11 restricted-range species have been listed, but it is not known how many bird species of this EBA are found here. According to the BirdLife International (undated) classification of biomes, this site should be part of Biome 7 (Sino-Himalayan Temperate Forest). This biome occurs from 1,800 to 3,600 m, which is also the altitudinal

BIOME 7: SINO-HIMALAYAN TEMPERATE FOREST

Koklass Pheasant	<i>Pucrasia macrolopha</i>
Himalayan Monal	<i>Lophophorus impejanus</i>
Variegated Laughingthrush	<i>Garrulax variegatus</i>
Bar-throated Minla	<i>Minla strigula</i>
Spot-winged Tit	<i>Parus melanolophus</i>
Grey-crested Tit	<i>Parus dichrous</i>
White-tailed Nuthatch	<i>Sitta himalayensis</i>
Yellow-breasted Greenfinch	<i>Carduelis spinoides</i>
Brown Bullfinch	<i>Pyrrhula nipalensis</i>
Red-headed Bullfinch	<i>Pyrrhula erythrocephala</i>

range of this IBA. BirdLife International (undated) has listed 112 bird species that represent biome assemblages of this area. Based on the information by S. Pandey (*pers. comm.* 2002), only 10 species of Biome 7 are found in this IBA.

Once detailed studies are conducted on the birdlife of Churdhar WLS, many more biome and restricted-range species are likely to be recorded. Till then, it is considered to be a Data Deficient site.

OTHER KEY FAUNA

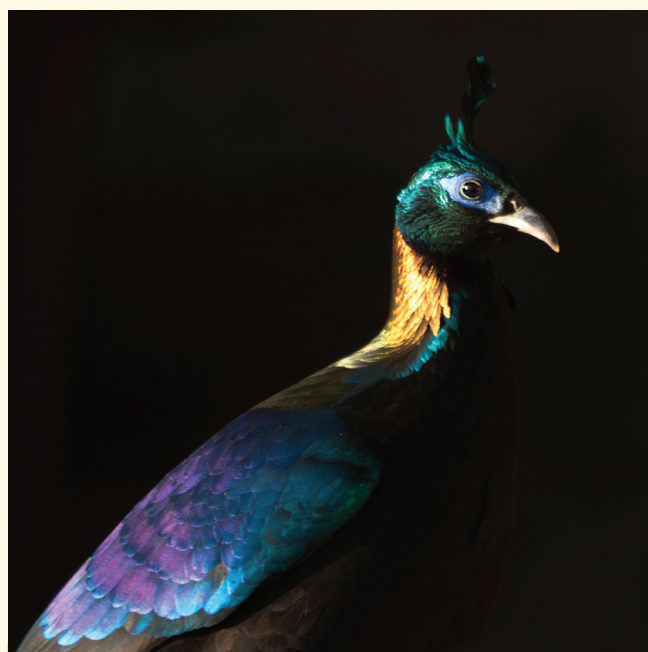
Before relentless poaching in the 1960s and 1970s, Churdhar had a good population of the Alpine Musk Deer *Moschus chrysogaster*, and the sanctuary was established primarily to protect this species. Indian Muntjac or Barking Deer *Muntiacus muntjak* and Himalayan Brown Goral *Naemorhedus goral* still survive in comparatively good numbers, despite some poaching. Asiatic Black Bear *Ursus thibetanus* is found in the higher reaches. Leopard *Panthera pardus* is distributed all over the sanctuary, especially near villages and settlements as it thrives on livestock and also on Wild Boar *Sus scrofa*. Indian Pika *Ochotona roylei* is found mostly above 3,000 m and forms the prey base for many smaller predators such as weasels, cats, and civets.

LAND USE

- Agriculture
- Collection of fodder, timber, fuel wood and minor forest produce
- Grazing
- Tourism and recreation

THREATS AND CONSERVATION ISSUES

- Poaching
- Human settlements



NIKIL DEVASAR

Churdhar WLS is a good habitat for Himalayan Monal *Lophophorus impejanus*, an iconic species of the Western Himalaya

- Disturbance due to pilgrims
- Livestock grazing

Churdhar has one of the last remaining natural forests in southern Himachal Pradesh (Singh *et al.* 1990). Residents have rights of habitation, agriculture, extraction of timber, fuel wood, and minor forest produce, livestock grazing, and collection of fodder. Gujjars (nomadic graziers) are given permits for grazing, and periodically bring large numbers of livestock into the sanctuary. Entry into the sanctuary is not regulated (Singh *et al.* 1990).

KEY CONTRIBUTORS

Shekar Singh, Sanjeeva Pandey.

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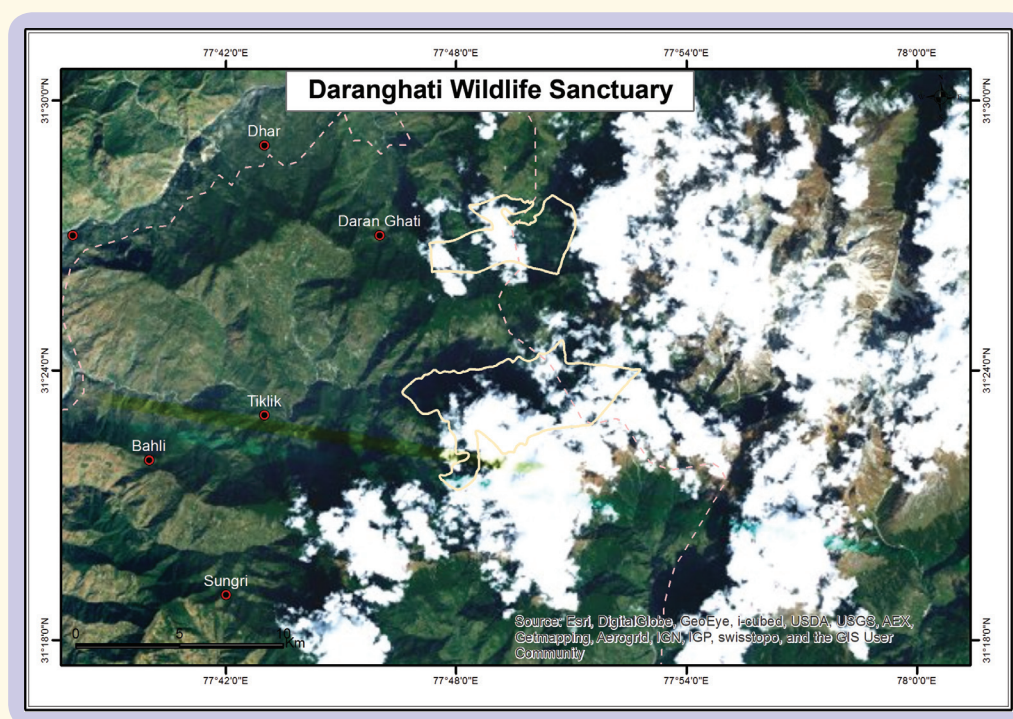
DARANGHATI WILDLIFE SANCTUARY

IN-HP-04

IBA Site Code	: IN-HP-04	Rainfall	: 750 mm
State	: Himachal Pradesh	Temperature	: -8 °C to 17 °C
District	: Sirmaur	Biogeographic Zone	: Himalaya
Coordinates	: 31° 24' 54.565" N, 77° 51' 31.146" E	Habitats	: Alpine Moist Scrub, Alpine Moist Pasture, Subtropical Broadleaf Hill, Sub-alpine Forest
Ownership	: State		
Area	: 1,715 ha		
Altitude	: 2,100–3,315 msl		

IBA CRITERIA: A1 (Threatened species), A2 (Endemic Bird Area 128: Western Himalaya)

PROTECTION STATUS: Wildlife Sanctuary, established 1962.



GENERAL DESCRIPTION

Daranghati Sanctuary lies in Shimla district. It is composed of two segments, with villages and cultivated areas in between. The two units of the sanctuary lie on either side of the Dhauladhar Range, that forms part of the Middle Himalaya. Part I of the sanctuary to the north forms the southern catchment area of the Manglad Gad. Three main rivers, including Wajadi Gad and Gharat Gad, flow northwards into Manglad Gad. Part II of the sanctuary to the south encompasses the southern catchment area of Nogli Gad. The main rivers flowing northwards through Part II into Nogli Gad include Bankdari Nala, Riger Gad, and Setlu Nala. Manglad and Nogli are eastern tributaries of the Sutlej river. There are several wooden temples in the vicinity, featuring the unique architecture of Himachal (Singh *et al.* 1990).

Daranghati, a former hunting reserve of the Raja of Bushahr State, shows signs of degradation, but remains particularly important for pheasants, notably the Western Tragopan *Tragopan melanocephalus*. It also supports a variety of Himalayan ungulates (Pandey 1990, Singh *et al.* 1990).

Pandey (1995) noted five main forest types: i. Moist Cedar *Cedrus deodara* forest (1,900–3,000 m); ii. Western Mixed Coniferous Forest on the northern and eastern slopes above 2,000 m, comprising Blue Pine *Pinus wallichiana*, Silver Fir *Abies spectabilis*, and Spruce *Picea smithiana*, with Cedar on well-drained sites; iii. Moist Temperate Deciduous; iv. Kharsu Oak forest with common associates *Taxus wallichiana*, *Pyrus*, and *Prunus*; and v. West Himalayan Sub-alpine forest, with Silver Fir and some *Quercus semecarpifolia*, above 3,000 m.

AVIFAUNA

Detailed studies on the birds of this site have not been conducted. Based on secondary information, Singh *et al.* (1990) prepared a short list of the avifauna of this sanctuary. The main species of conservation interest is the Western Tragopan *Tragopan melanocephalus*. Gaston *et al.* (1981a, b), found no evidence of Cheer Pheasant *Catreus wallichii*, though it used to occur in this area (Wynter-Blyth 1951). Himalayan Monal *Lophophorus impejanus*, Koklass Pheasant *Pucrasia macrolopha*, and Kaleej Pheasant *Lophura leucomelanos* are also found here.

This site is selected as an IBA based on the presence of the globally Threatened Western Tragopan. Pandey (1995) estimated a density of 1.5 birds per sq. km in their winter habitat. He estimated that both parts of Daranghati WLS and the surrounding areas may support a population of 150 to 250 birds. This could be one of the most important sites for this globally Threatened bird, listed as Vulnerable by BirdLife International (2014). It is also listed as restricted-range in the Western Himalaya Endemic Bird Area EBA 128 (Stattersfield *et al.* 1998).

OTHER KEY FAUNA

Daranghati WLS has almost all the representative mammals of the temperate forest and subalpine zone of Himachal Pradesh. Asiatic Black Bear *Ursus thibetanus* is the largest wild carnivore of the sanctuary, mainly found above 3,000 m in summer, and much lower in winter. Brown Bear *Ursus arctos* is also found in the alpine and subalpine regions. Leopard *Panthera pardus* is the major carnivore. Wild ungulates such as Alpine Musk Deer *Moschus chrysogaster*, Barking Deer *Muntiacus muntjak*, Himalayan Brown Goral *Naemorhedus goral*, Himalayan Serow *Capricornis thar*, and Himalayan Tahr *Hemitragus jemlahicus* are recorded. Asiatic Ibex *Capra sibirica* and Bharal or Greater Blue Sheep *Pseudois nayaur* are reported on higher elevations. Smaller carnivores include Red Fox *Vulpes vulpes*, Siberian Weasel *Mustela sibirica*, Yellow-throated Marten *Martes flavigula*, Himalayan Palm Civet *Paguma larvata*, and Jungle Cat *Felis chaus*. Not much is known about the reptile and amphibian fauna.

LAND USE

- Nature conservation and research
- Tourism and recreation
- Urban transport
- Water management

THREATS AND CONSERVATION ISSUES

- Forest fires
- Poaching and Grazing
- Firewood collection and Disturbance to birds
- Human settlements

VULNERABLE

Western Tragopan	<i>Tragopan melanocephalus</i>
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NEAR THREATENED

Himalayan Griffon	<i>Gyps himalayensis</i>
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ENDEMIC BIRD AREA 128: WESTERN HIMALAYA

Western Tragopan	<i>Tragopan melanocephalus</i>
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Like most of the sanctuaries in Himachal Pradesh, Daranghati WLS has a large human population residing in and around the sanctuary. Villagers have rights of fuel wood and minor forest produce collection, and livestock grazing. Two villages exist inside the sanctuary and the peripheral areas have 26 villages. Nomadic Gujjars have grazing permits. Poaching is not uncommon, especially of ungulates and pheasants.

During the rationalisation of boundaries of PAs in Himachal Pradesh, both parts of the sanctuary have been lined and villages taking out. This makes the area enlarged and ecologically viable for endangered sp. Such as the Western Tragopan and Cheer Pheasant.

There is a need to link both parts of the sanctuary and further enlarge the area, so an ecologically viable area may be provided for the protection of Western Tragopan (Pandey 1990, 1995). Regular monitoring of bird populations should also be undertaken.

KEY CONTRIBUTOR

Sanjeeva Pandey.

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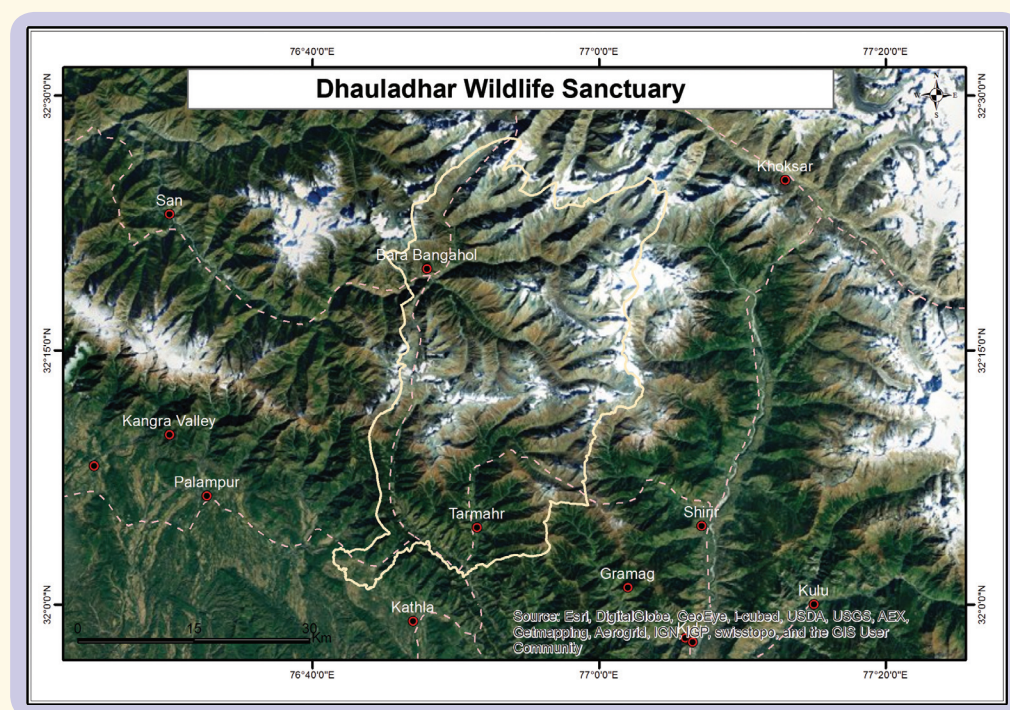
DHAULADHAR WILDLIFE SANCTUARY

IN-HP-05

IBA Site Code	: IN-HP-05	Altitude	: 1,600–4,400 msl
State	: Himachal Pradesh	Rainfall	: 2,000–3,000 mm
District	: Kangra	Temperature	: Not available
Coordinates	: 32° 14' 26.147" N, 76° 53' 38.765" E	Biogeographic Zone	: Himalaya
Ownership	: State	Habitats	: Alpine Moist Scrub, Alpine Moist Pasture, Himalayan Wet Temperate Forest?
Area	: 98,286 ha		

IBA CRITERIA: A1 (Threatened species), A2 (Endemic Bird Area 128: Western Himalaya)

PROTECTION STATUS: Wildlife Sanctuary, established December, 1994.



GENERAL DESCRIPTION

Dhauladhar WLS is an area of high altitude forests, above Jogindernagar, in Himachal Pradesh. The sanctuary and the surrounding reserved forests have been identified as an IBA. The forested region at the foot of the Dhauladhar between 700 and 1,400 m, around Sarah below Dharamshala, should also be included in this IBA as many species from the higher zones winter in these forests. Thus, a contiguous area from the base to the higher altitudes in Dhauladhar range must be considered as an IBA.

Oak and Rhododendron forests are interspersed with grassy slopes and meadows in this IBA. Above the tree line, alpine meadows and rocky mountains dominate, covered in snow for much of the year. In the reserve forests on the lower reaches of Dhauladhar, Deodar *Cedrus deodara* is dominant, while below 1,600 m large areas have been planted with

Pine. Other parts of this zone bear good examples of Oak forest.

Uniyal *et al.* (2006) mentions the occurrence of some medicinal plants in the sanctuary, including *Aconitum heterophyllum*, *Bergenia stracheyi*, *Heracleum candicans*, *Jurinea macrocephala*, *Podophyllum hexandrum*, *Picrorhiza kurroa*, *Rheum australe*, and *Selinum tenuifolium*.

AVIFAUNA

The Dhauladhar range, with elevations between 1,600 and 4,400 m, is rich in mountain birds of Biome 5, Biome 7, and Biome 8. The Himalayan Monal *Lophophorus impejanus*, Koklass Pheasant *Pucrasia macrolopha*, Kaleej Pheasant *Lophura leucomelanos*, and Common Hill-partridge *Arborophila torqueola* are common breeders in considerable

parts of the IBA, while Cheer Pheasant *Catreus wallichii*, Chukar Partridge *Alectoris chukar*, Snow Partridge *Lerwa lerwa*, and Himalayan Snowcock *Tetraogallus himalayensis* occur in smaller numbers in more restricted habitats (J.W. den Besten, *pers. comm.* 2003). Hunters in the area claim that the Western Tragopan *Tragopan melanocephalus* still occurs on undisturbed slopes around McLeod Gunj (*pers. comm.* to J.W. den Besten 2003).

Raptors are remarkably common in the area, with 36 species recorded. Among the breeding species are Booted Eagle *Hieraetus pennatus*, Golden Eagle *Aquila chrysaetos*, Lammergeier or Bearded Vulture *Gypaetus barbatus*, Crested Serpent-eagle *Spilornis cheela*, Long-legged Buzzard *Buteo rufinus*, White-eyed Buzzard *Butastur teesa*, and Eurasian Hobby *Falco subbuteo*. Possible breeders include Common Kestrel *Falco tinnunculus*, Mountain Hawk-eagle *Spizaetus nipalensis*, and Eurasian Sparrowhawk *Accipiter nisus*. Globally Threatened species (BirdLife International 2014) such as Eastern Imperial Eagle *Aquila heliaca*, Greater Spotted Eagle *A. clanga*, and Indian Spotted Eagle *Aquila hastata* have been observed in the area, while White-rumped Vulture *Gyps bengalensis* is still fairly common in the lower areas, with small numbers of Red-headed Vulture or King Vulture *Aegypius calvus* and wintering Cinereous Vulture *Aegypius monachus*. Restricted-range species include Tytler's Leaf-warbler *Phylloscopus tytleri*, Solitary Snipe *Gallinago solitaria*, and Red-browed Finch *Callacanthus burtoni* (J.W. den Besten, *pers. comm.* 2003).

This is one of the very few sites where the globally Threatened Wood Snipe *Gallinago nemoricola* has been reported. There is a specimen in the British Museum of Natural History collected in October 1869 (BirdLife International 2014). The Wood Snipe had always been an uncommon bird. It now has a small declining population, as a result of habitat loss and hunting. IBA sites such as

CRITICALLY ENDANGERED

White-rumped Vulture	<i>Gyps bengalensis</i>
Red-headed Vulture	<i>Aegypius calvus</i>

VULNERABLE

Greater Spotted Eagle	<i>Clanga clanga</i>
Eastern Imperial Eagle	<i>Aquila heliaca</i>
Indian Spotted Eagle	<i>Clanga hastata</i>
Western Tragopan (?)	<i>Tragopan melanocephalus</i>
Cheer Pheasant	<i>Catreus wallichii</i>
Wood Snipe	<i>Gallinago nemoricola</i>

NEAR THREATENED

Cinereous Vulture	<i>Aegypius monachus</i>
Bearded Vulture	<i>Gypaetus barbatus</i>
Tytler's Leaf-warbler	<i>Phylloscopus tytleri</i>

ENDEMIC BIRD AREA 128: WESTERN HIMALAYA

Western Tragopan (?)	<i>Tragopan melanocephalus</i>
Cheer Pheasant	<i>Catreus wallichii</i>
Tytler's Leaf-warbler	<i>Phylloscopus tytleri</i>

Dhauladhar can play an important role in the conservation of this species.

This large IBA lies in the Western Himalaya Endemic Bird Area (EBA 128) (Stattersfield *et al.* 1998) and has four out of 11 restricted-range species. BirdLife International (undated) has classified biomes based on forest types and bird assemblages (A3 criteria). This site lies in Biome 7 (Sino-Himalayan Temperate Forest). 112 bird species are listed in this biome, whose distributions are largely or wholly confined to it. With its extensive and largely intact forest cover, Dhauladhar WLS and reserve forests are perhaps among the best examples of Biome 7. Based on extensive surveys, J.W. den Besten (*pers. comm.* 2003) listed 51 species typical of Biome 7 in this site. He found 15 out of 48 species of Biome 5 (Eurasian High Montane-Alpine and Tibetan), mainly in winter when the birds come down. As Biome 7 and Biome 8 (Sino-Himalayan Subtropical Forest) intergrade, and many species show altitudinal movement, 10 species of Biome 8 are also found in this site.

OTHER KEY FAUNA

Several mammals have recently been reported in and around the wildlife sanctuary: Leopard *Panthera pardus*, Himalayan Goral *Naemorhedus goral*, Barking Deer *Muntiacus muntjak*, Common Palm Civet *Paradoxurus hermaphroditus*, Himalayan Yellow-throated Marten *Martes flavigula*, Himalayan Weasel *Mustela sibirica*, Indian Pika *Ochotona roylei*, Black-naped Hare *Lepus nigricollis*, Indian Crested Porcupine *Hystrix indica*, Red Giant Flying Squirrel *Petaurista petaurista*, Nepal Grey Langur *Semnopithecus schistaceus*, Red Fox *Vulpes vulpes*, Jackal *Canis aureus*, Asiatic Black Bear *Ursus thibetanus* (J.W. den Besten, *pers. comm.* 2003). Also reported in Forest Department circulars are the Snow Leopard *Uncia uncia*, Leopard Cat *Prionailurus bengalensis*, Jungle Cat *Felis chaus*, Brown Bear *Ursus arctos*, Himalayan Tahr *Hemitragus jemlahicus*, Asiatic Ibex *Capra sibirica*, Himalayan Serow *Capricornis thar*, and Blue Sheep *Pseudois nayaur*.

LAND USE

- Grazing
- Tourism and recreation

CONSERVATION ISSUES

- Burning of vegetation
- Grazing
- Firewood collection
- Tourism
- Solid waste
- Poaching

As the sanctuary extends over a large area above Dharamshala, it is influenced by the expanding tourist activities at McLeod Gunj. Though construction of hotels



SOORAJ BISHNOI

Himachal Pradesh is one of the states with the highest number of pheasant species. The large number of IBAs and PAs play an important role in the conservation of pheasants such as Himalayan Monal *Lophophorus impejanus* and many endemic species of the Western Himalaya

and other buildings has been done outside the protected area, there is some construction on private land, and also the threat of road construction up to Triund (in Dharamshala) at 2,900 m, and possibly a cable track as well. Pollution around the tourist centre at 1,900 m is severe, notably from solid waste and sewage, and the impact of littering extends into the mountains and into the sanctuary because of the large numbers of trekkers and visitors. Forest fires are bound to increase with the rise in numbers of campers, trekkers, and others in the area. Tea stalls set up on small plots of private land in and around the sanctuary often use wood for cooking and add to deforestation, besides littering the area. However, the presence of tourists may help to reduce the number of poachers in the IBA.

Collection of branches and dry wood has some impact at all levels, but in the higher reaches where the production of biomass is slow because of the climate, this is extremely detrimental, as damaged trees die quickly. Pastures such as at Ilaka, where large numbers of herders gather on their

way to and from the pastures beyond the Dhauladhar, have experienced a slow and steady decline of tree cover right at the tree line (J.W. den Besten, *pers. comm.* 2003).

KEY CONTRIBUTOR

J. W. den Besten.

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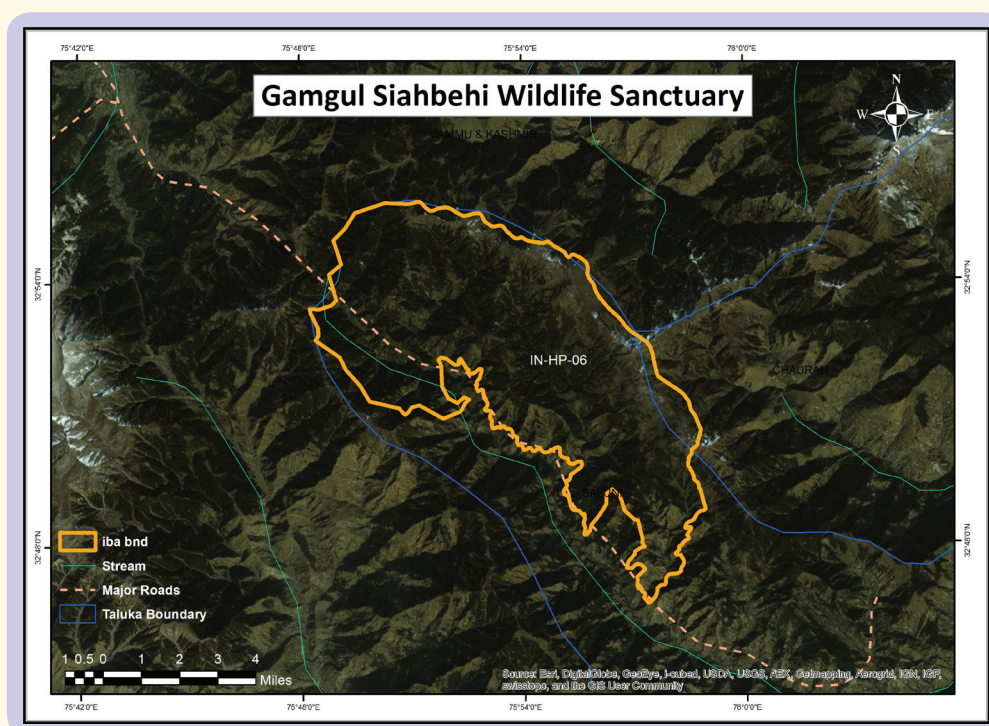
GAMGUL SIAHBEHI WILDLIFE SANCTUARY

IN-HP-06

IBA Site Code	: IN-HP-06	Altitude	: 1,800–3,919 msl
State	: Himachal Pradesh	Rainfall	: 1,143 mm
District	: Chamba	Temperature	: -10 °C to 35 °C
Coordinates	: 32° 52' 46.965" N, 75° 54' 13.411" E	Biogeographic Zone	: Himalaya
Ownership	: State	Habitats	: Alpine Pasture, Western Mixed Coniferous Forest, Moist Deodar Forest
Area	: 10,840 ha		

IBA CRITERIA: A1 (Threatened species), A2 (Endemic Bird Area 128: Western Himalaya)

PROTECTION STATUS: Wildlife Sanctuary, established in 1962.



GENERAL DESCRIPTION

This high altitude sanctuary lies in Chamba district in northwestern Himachal Pradesh. Its northern boundary adjoins Doda district of Jammu & Kashmir. The Siul nullah flows along the western boundary of the sanctuary and the nearest largest town is Bhandal. This is the only sanctuary in Himachal Pradesh where the rare Hangul or Kashmir Stag *Cervus elaphus hanglu* was reported, but there have been no recent records.

Based on the classification by Champion & Seth (1968), three main forest types have been identified by Singh *et al.* (1990). These are Alpine Pasture above 3,000 m, Western Mixed Coniferous Forest, and Moist Deodar Forest. The Forest Department has planted Deodar *Cedrus deodara*, Pine *Pinus wallichiana*, and other species for commercial purposes. They have also introduced Poplar *Populus* sp.

In order to allow developmental activities in villages inside the protected area, a part of the sanctuary was denotified in 2013, which included 32 villages. The total area excluded from the protected area was 1,560 ha.

AVIFAUNA

Singh *et al.* (1990) provided a preliminary list of 100 bird species from the sanctuary, which includes four species of pheasants, including the two globally Threatened species, Western Tragopan *Tragopan melanocephalus* and Cheer Pheasant *Catreus wallichii*, and two comparatively common ones, Himalayan Monal *Lophophorus impejanus* and Koklass *Pucrasia macrolopha*.

Gamgul Siahbehi WLS lies in an area which is classified as Western Himalaya Endemic Bird Area (EBA) by Stattersfield *et al.* (1998). In this EBA, 11 restricted-range

species have been listed, but only two of these restricted-range species could be identified here, namely Western Tragopan and Cheer Pheasant.

According to the BirdLife International (undated) classification of biomes, this site should be classified as Biome 7 (Sino-Himalayan Temperate Forest). Biome 7 occurs from 1,800 to 3,600 m, which is also the altitudinal range of this IBA. BirdLife International (undated) has listed 112 bird species that represent biome assemblages of this area. Based on the information by S. Pandey (*pers. comm.* 2002) and Sondhi & Sondhi (1998), only 13 species of this biome are found in Gangul Siahbehi WLS.

Although this site is small (only 9,325 ha remain protected out of 10,885 ha), due to its altitudinal variation and varied habitats, it is an important protected area for the conservation of globally Threatened pheasants and many high altitude forest birds. Detailed studies on the birdlife are urgently required to determine the density and abundance of various species.

VULNERABLE

Western Tragopan	<i>Tragopan melanocephalus</i>
Cheer Pheasant	<i>Catreus wallichi</i>

ENDEMIC BIRD AREA 128: WESTERN HIMALAYA

Western Tragopan	<i>Tragopan melanocephalus</i>
Cheer Pheasant	<i>Catreus wallichi</i>

OTHER KEY FAUNA

Prior to Independence, more than 68 years ago, the Hangul could be seen throughout the year though more commonly during rutting time in October, above 3,000 m (Mukherjee & Mahajan 1978). It was never numerous in Himachal, probably not more than 25 individuals, but now even these are not seen, due to poaching in the early 1950s and 1960s. The population in Jammu & Kashmir has also declined, so there is little hope of this rare mammal coming to Himachal from there.

Fortunately, the sanctuary still has other fauna typical of high altitude temperate forests and alpine pastures, albeit in small numbers. The important species are Ibex *Capra sibirica*, Alpine Musk Deer *Moschus chrysogaster*, Himalayan Serow *Capricornis thar*, Himalayan Tahr *Hemitragus jemlahicus*, and Himalayan Goral *Naemorhedus goral*. Asiatic Black Bear *Ursus thibetanus* and Brown Bear *Ursus arctos* are also found, the latter mainly in the alpine pastures. At lower elevations, Leopard *Panthera pardus* is the main large predator. It also kills livestock, so man-animal conflict is common. Smaller predators include the Red Fox *Vulpes vulpes*, Himalayan Weasel *Mustela sibirica*, Jungle Cat *Felis chaus*, Golden Jackal *Canis aureus*, Yellow-throated Marten *Martes flavigula*, and Himalayan Palm Civet *Paguma larvata* are common in the alpine areas. Barking Deer or Indian Muntjac *Muntiacus muntjak*, Indian

Crested Porcupine *Hystrix indica*, and Red Giant Flying Squirrel *Petaurista petaurista* are mostly found below 3,000 m in forested areas.

LAND USE

- Nature conservation and research
- Tourism and recreation
- Urban transport
- Human settlement

THREATS AND CONSERVATION ISSUES

- Forest fires
- Grazing
- Firewood collection
- Disturbance to birds

The sanctuary is under severe anthropogenic pressure. Three villages are located inside the sanctuary and many on the border. Livestock grazing, fuel wood collection, and timber extraction have a major negative impact on the vegetation. In order to get fresh grass for livestock, villagers start fires, which sometimes go out of control. Poaching is not uncommon, especially of pheasants and ungulates.

There are five wildlife sanctuary areas in Chamba district. Under the rationalisation of boundaries of PAs in Himachal Pradesh, villages taken out of the wildlife sanctuary areas include 19 sq. km. area of 18 villages in Tundah Sanctuary, 15.60 sq. km. area of 32 villages in Gangul-Siyabhai Sanctuary, 8.81 sq. km. area of two villages of Kugti Sanctuary, 52.98 sq. km. area of five villages of Sechu-Tuan Sanctuary, and 51.83 sq. km. area of Kala Top Khajiyar Sanctuary.

KEY CONTRIBUTOR

Sanjeeva Pandey.

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Links:

<http://timesofindia.indiatimes.com/city/chandigarh/775-Himachal-village-excluded-from-sanctuary-areas/articleshow/26435686.cms> (Accessed on November 11, 2014).

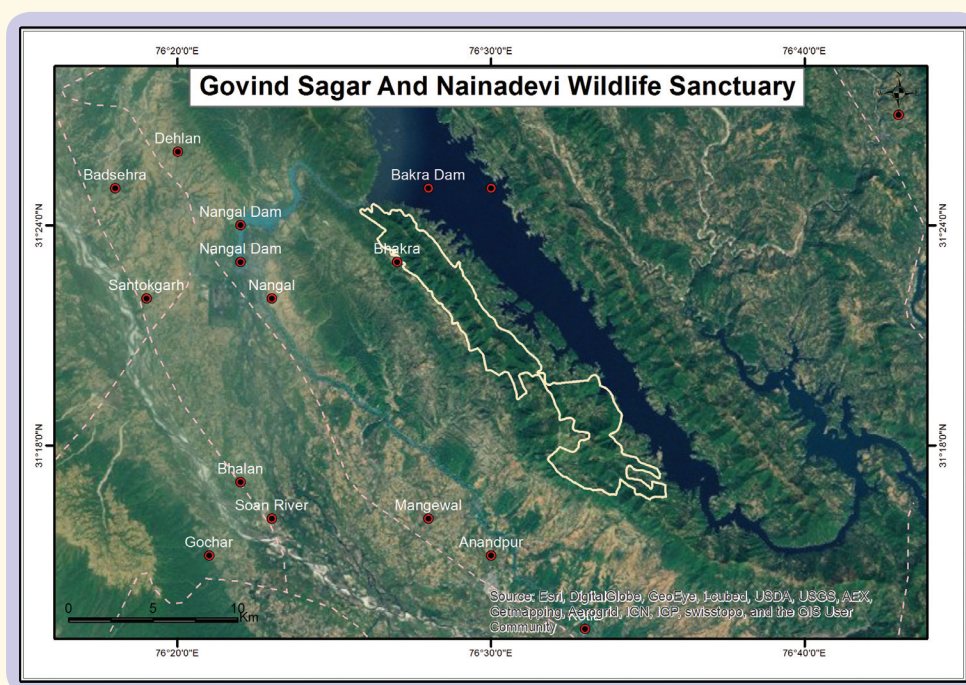
GOBIND SAGAR AND NAINA DEVI WILDLIFE SANCTUARIES

IN-HP-07

IBA Site Code	: IN-HP-07	Altitude	: 350–1,019 msl
State	: Himachal Pradesh	Rainfall	: 1,155 mm
District	: Bilaspur, Mandi	Temperature	: -2 °C to 45 °C
Coordinates	: 31° 22' 39" N, 76° 44' 48" E	Biogeographic Zone	: Semi-arid
Ownership	: State	Habitats	: Reservoir and
Area	: 12,334 ha (Naina Devi WLS)		Dry Mixed Deciduous Forest

IBA CRITERIA: A1 (Threatened species). Data Deficient.

PROTECTION STATUS: Gobind Sagar Wildlife Sanctuary, established in 1962 but the entire sanctuary of 100 sq. km. was de-notified on June 07, 2013. Naina Devi Wildlife Sanctuary, established in 1982 is retained.



GENERAL DESCRIPTION

The erstwhile sanctuary Gobind Sagar (10,034 ha) was situated in Bilaspur and Mandi districts. Naina Devi Wildlife Sanctuary (12,300 ha) is located in Bilaspur district of Himachal Pradesh. As the sanctuaries are in the Lower Shiwalik Hills, floral and faunal affinities are close to Dry Deciduous Forest of the northern plains (Singh *et al.* 1990). Gobind Sagar, as the name indicates, is a water reservoir formed by the construction of the Bhakra Dam in the early 1950s on the Sutlej river. The reservoir attracts thousands of waterfowl, while the adjoining forests of Naina Devi Sanctuary represent many Biome 8 species. These two sanctuaries are treated as one IBA due to their proximity. Despite the fact that Gobind Sagar Reservoir was denotified, we are retaining it as an IBA.

Forest types on the periphery of Gobind Sagar include Northern Dry Mixed Deciduous. Naina Devi WLS has

Northern Dry Mixed Deciduous Forest (3,000 ha) and Chir Pine Forest (1,550 ha). There are also some dry bamboo brakes. Commercial plantations of Chir and Acacia sp. were established on 1,427 ha in Naina Devi between 1979 and 1984. Eucalyptus has also been introduced (Singh *et al.* 1990).

AVIFAUNA

The avifauna is poorly recorded, but Singh *et al.* (1990) provided a preliminary list of 15 bird species. However, eBird data (2014) shows that a total of 137 species have been recorded from Naina Devi and 40 from Gobind Sagar. As the forest is still intact in places, and the large wetland attracts numerous waterfowl, further surveys would yield more species than the present record. Presently, we know of only four globally Threatened vultures (see Table) that used to occur regularly in this IBA, but now they are very rare.

Till such time as the total number of waterfowl and species-wise abundance and populations are assessed, this site is considered as Data Deficient in terms of bird information.

OTHER KEY FAUNA

Almost all the large mammalian species representative of subtropical forests in the Lower Himalaya are found here, except for Tiger *Panthera tigris*, which became locally extinct due to hunting.

Kumar & Mattu (2014) have reported 39 species of butterflies from Mandi district, including the Common Jezebel *Delias eucharis*, Danaid Eggfly *Hypolimnas misippus*, Blue Pansy *Precis orithya*, Commodore *Auzakia danava*, Common Pierrot *Castalius rosimon*, and Indian Palm Bob *Suastus gremius*.

LAND USE

- Agriculture
- Aquaculture and fisheries
- Nature conservation and research

THREATS AND CONSERVATION ISSUES

- Grazing
- Collection of timber, fuel wood, forest products
- Extraction of fodder
- Disturbance due to religious activities
- Water pollution
- Human habitations

The local people have rights or leases for grazing, collection of timber, fuel wood and minor forest produce, fodder extraction, and religious activities. The Bhakra

CRITICALLY ENDANGERED

White-rumped Vulture (now stray records)	<i>Gyps bengalensis</i>
Slender-billed Vulture (now stray records)	<i>Gyps tenuirostris</i>
Red-headed Vulture (now stray records)	<i>Aegypius calvus</i>

ENDANGERED

Egyptian Vulture	<i>Neophron percnopterus</i>
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NEAR THREATENED

Himalayan Griffon	<i>Gyps himalayensis</i>
River Lapwing	<i>Vanellus duvaucelii</i>
Blossom-headed Parakeet	<i>Psittacula roseata</i>
Alexandrine Parakeet	<i>Psittacula eupatria</i>

Management Board has control over Gobind Sagar. The Public Works Department controls the 20 km stretch of road inside Naina Devi WLS (Singh *et al.* 1990). With all these anthropogenic factors, this IBA is highly disturbed.

KEY CONTRIBUTOR

Sanjeeva Pandey.

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Links:

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GREAT HIMALAYAN NATIONAL PARK

IBA Site Code : IN-HP-08

State : Himachal Pradesh

District : Kullu

Coordinates : 31° 47' 53.629" N,
77° 39' 37.347" E

Ownership : State

Area : 90,540 ha

Altitude : 1,500–5,805 msl

Rainfall : 1,500 mm

Temperature : -5 °C to 30 °C

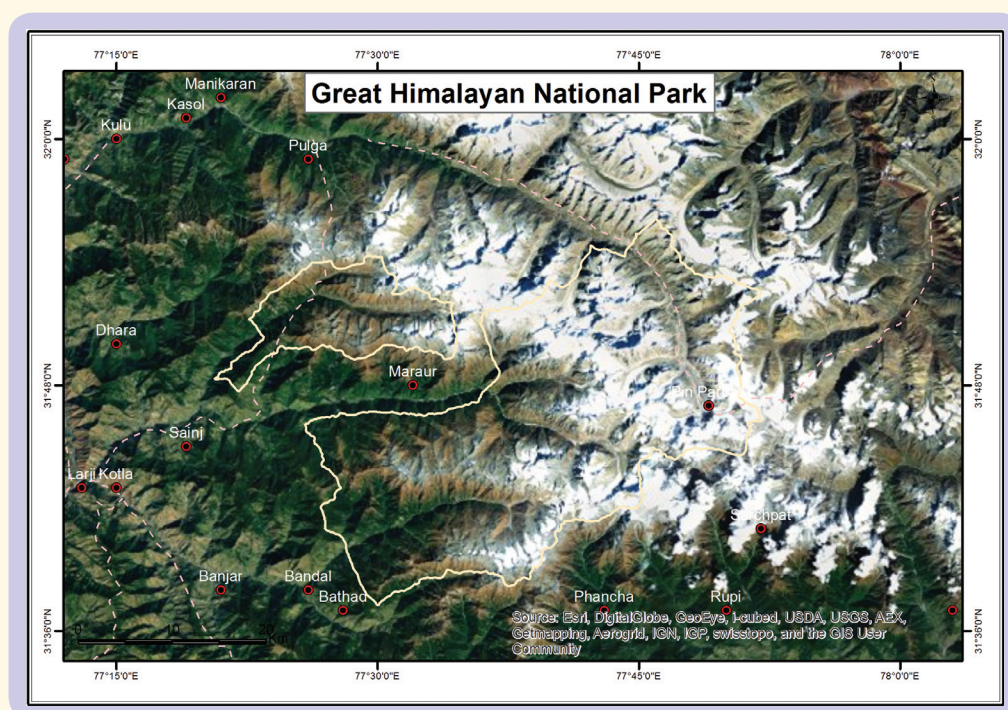
Biogeographic Zone : Himalaya

Habitats : Sub-alpine Dry Scrub,
Alpine Moist Pasture,
Sub-tropical Broadleaf Hill Forest

IN-HP-08

IBA CRITERIA: A1 (Threatened species), A2 (Endemic Bird Area 128: Western Himalaya)

PROTECTION STATUS: National Park, final notification 1999. Declared as a World Heritage Natural Site in 2014.



GENERAL DESCRIPTION

The sprawling Great Himalayan National Park in Kullu district has relatively undisturbed areas which support diverse Himalayan wildlife. The park lies in the upper catchment area of the Tirthan, Sainj, and Jiwa nullahs, which flow westwards and feed the Beas river. The park is bordered by the recently established (2010) Khirganga National Park (710 sq. km), Pin Valley National Park (675 sq. km) in Trans-Himalaya, Rupin-Bhabha Wildlife Sanctuary (503 sq. km) in Sutlej watershed, and Kanawar Wildlife Sanctuary (61 sq. km). Together these four protected areas add 1,949 sq. km to the park and its buffer zone, making the total contiguous protected area associated with the Great Himalayan National Park approximately 2,854.4 sq. km, not including the park's ecozone (265.6 sq. km). These constitute Himachal Pradesh's largest protected area. The

eastern part of the park lies above the snowline, and has glaciers and a permanent icecap.

The park and its associated PAs lie within the overlapping boundaries of several major ecological zones and faunal regions, including (1) the dry deserts of interior Asia and the well-watered lowlands of the Indian plains, (2) the Indomalayan and Palearctic Realms, (3) the high plateau of Tibet and Himalayan peaks, and (4) the catchments of the Beas and Sutlej rivers, both significant tributaries of the Indus.

Because of its complex geography, overlap of multiple zones, and great variations in altitude, the area encompasses a very large diversity of plants, birds, and animals. These species span the subtropical to the alpine, and include those characteristic of Southeast Asian forests as well as those found across Siberia and the Asian steppes. Few sanctuaries

DHRITIMAN MUKHERJEE



Great Himalayan National Park, which spreads over c. 2,854 sq. km is one of the finest IBAs in the Western Himalaya. More than 200 bird species and a very large number of mammals have been identified from this IBA

present such a variety of wildlife habitat and biodiversity in such a diverse area.

In the regional context, GHNP is a recent addition (1999) to a network of protected areas in northern India providing increasing protection to one of the world’s 34 major biodiversity hotspots, the Himalaya. There are significant variations across such an extensive region, but GHNP’s location in the far Western Himalaya means it represents and protects an important component of this critical, globally-recognized hotspot. The World Wide Fund for Nature (WWF) has listed parts of the Himalaya in its Global 200 analysis of critical ecosystems (since 2001), and

GHNP is within one of them. GHNP lies is one of more than 200 globally important Endemic Bird Areas (D02: Western Himalaya) identified by the BirdLife International Biodiversity Project (at that time BirdLife International was known as ICBP). There were 183 species of birds (both resident and migrant) reported by Gaston *et al.* (1993). Ramesh (2003) added 26 more species to the list, bringing the total number of species confirmed to 209.

Based on the forest classification by Champion & Seth (1968), 14 forest types could be identified in Great Himalayan NP. In brief, about a third of the Park supports undisturbed forest, mainly around Jiva, Sainj, and Tirthan nullah (streams) and their tributaries, extending from the base of the valley to 3,300 m (Anon. 1997). A little over half of the park area lies above 4,000 m, covering alpine meadows, particularly on the south side of Sainj Valley above Shangarh and at Dela Thach, above Lapah. The northern aspects of Tirthan Valley are clothed in dense forest, dominated by Blue Pine *Pinus wallichiana*, and higher up by a diverse Deciduous Broadleaf Forest on moderately sloping areas and Fir *Abies pindrow* on steep areas. Tirthan Valley, between Bandal and Rolla, also supports small areas of Oak forest (*Quercus incana* and other oaks). The southern aspects are generally more open; stands of Cedar *Cedrus deodara* are interspersed with grassy and shrub-clad hillsides, with a

VULNERABLE	
Western Tragopan	<i>Tragopan melanocephalus</i>
Cheer Pheasant	<i>Catreus wallichii</i>
NEAR THREATENED	
Cinereous Vulture	<i>Aegypius monachus</i>
ENDEMIC BIRD AREA 128: WESTERN HIMALAYAS	
Western Tragopan	<i>Tragopan melanocephalus</i>
Cheer Pheasant	<i>Catreus wallichii</i>
White-cheeked Tit	<i>Aegithalos leucogenys</i>
White-throated Tit	<i>Aegithalos niveogularis</i>
Spectacled Finch	<i>Callacanthis burtoni</i>
Orange Bullfinch	<i>Pyrrhula aurantiaca</i>

zone of Kharsu Oak *Quercus semecarpifolia* forest above 2,800 m. There is a stand of Yew *Taxus wallichiana* near Manjhan village in Jiwa Valley. This species is under constant threat due to its valuable medicinal properties.

AVIFAUNA

The area is particularly notable for its prolific pheasant populations. The park is home to over 209 species of birds (Gaston *et al.* 1994), an excellent representation of West Himalayan avifauna. The Himalayan Monal *Lophophorus impejanus*, Koklass Pheasant *Pucrasia macrolopha*, Kaleej Pheasant *Lophura leucomelanos*, and Common Hill-partridge *Arborophila torqueola* are common, while Cheer Pheasant *Catreus wallichii* and Western Tragopan *Tragopan melanocephalus* have more restricted ranges. Chukar Partridge *Alectoris chukar*, Snow Partridge *Lerwa lerwa*, and Himalayan Snowcock *Tetraogallus himalayensis* occur in suitable habitats all over the park. This IBA could be the most important site in Himachal Pradesh for galliform conservation. Ramesh *et al.* (1999) studied pheasants in the park during 1997–1999 and reported encounter rates (number of birds per km walk) for Himalayan Monal (range 1.5 to 3.9), Western Tragopan (0 to 0.4) and Koklass Pheasant (0.3 to 1.4). Miller (2010) conducted a survey here

and recorded 32 Western Tragopan, 295 Koklass Pheasant, and 115 Himalayan Monal.

This extensive park, and the adjoining PAs make this IBA unique in Western Himalaya. Ramesh *et al.* (2008) captured and radio-tagged a single Western Tragopan, which revealed that the bird used five types of vegetation, namely mixed coniferous forest, mixed coniferous and broadleaf forest, broadleaf forest, open forest, and grassy blanks. BirdLife International (undated) has identified various biome-restricted bird assemblages. In this IBA, the main biome is Sino-Himalayan Temperate Forest (Biome 7), between 1,800 m and 3,600 m. In the higher reaches, above 3,600 m, Eurasian High Montane (Alpine and Tibetan) bird fauna is seen (Biome 5), while below 2,000 m, many subtropical bird assemblages are found in the Sino-Himalayan Subtropical Forest (Biome 8). As can be expected, the largest number of bird species are from Biome 7. BirdLife International (undated) has listed 112 species of Biome 7, out of which 50 have been identified till now in GHNP. Forty-eight birds are listed for Biome 5. This site has 12 of them. As the area is remote, perhaps more than double the known number would be present, if detailed surveys are conducted. Eleven out of 95 species of Biome 8 have been located till now, and more are likely to be found.



DHRITIMAN MUKHERJEE

Excellent subtropical broadleaf forest, alpine moist pasture, and sub-alpine dry scrub are found in Great Himalayan National Park

This large IBA lies in the Western Himalaya Endemic Bird Area (EBA 128) (Stattersfield *et al.* 1998) and has five out of its 11 restricted-range species. Considering the undisturbed habitat available, some restricted-range species would have a considerable percentage of their total numbers in this IBA alone.

A few species that breed in the Great Himalayan National Park are considered by Birdlife International to be of possible concern. These include, as indicated earlier, the Western Tragopan and Cheer Pheasant, as well as the Red-headed Vulture *Aegypius calvus*, Long-billed Thrush *Zoothera monticola* and White-throated Tit *Aegithalos niveogularis*. The latter two species are fairly abundant in suitable habitat within the park.

A few species recorded in Great Himalayan National Park are at the western limit of their distribution. These include the White-browed Shortwing *Brachypteryx montana*, for which there are few records west of Nepal, the Little Pied Flycatcher *Ficedula westermanni*, not known previously west of Garhwal, and the Rufous-vented Tit *Periparus rubidiventris*, which occurs only sporadically to the west of Nepal, and the occurrence of which in GHNP was a significant range extension when originally described. The Red-browed Finch *Callacanthis burtoni*, though found from Hazara to Nepal, is uncommon throughout its range. It is seen regularly in dense spruce and fir forest in the park.

Ornithological investigations of the Park are by no means complete. In particular, the alpine areas have been rarely visited in summer, so the list of high altitude breeders is certainly incomplete. In addition, there have been few observations between November and February, when high altitude species may be driven down into the valley bed by heavy snow. Observations in winter, even at low altitudes, would help to clarify the migratory status of many species. Further work in spring and summer is required to establish whether or not most of the species recorded so far also breed within the park, and if so, in what altitude range and in which forest types. Visits in May, when weather conditions are usually good, would be especially valuable for this purpose.

OTHER KEY FAUNA

The Park has almost all the representative mammalian fauna of the Western Himalaya. Among primates, both Rhesus Macaque *Macaca mulatta* and Himalayan Langur *Semnopithecus schistaceus* are present. Carnivores such as Leopard *Panthera pardus* and both Asiatic Black Bear *Ursus thibetanus* and Brown Bear *Ursus arctos* are commonly encountered. Himalayan Tahr *Hemitragus jemlahicus* and Himalayan Brown Goral *Naemorhedus goral* occur in good numbers, and Barking Deer or Indian Muntjac *Muntiacus muntjak* and Himalayan Serow *capricornis thar* in smaller numbers. Alpine Musk Deer *Moschus chrysogaster* has been recorded in Tirthan and Sainj valleys (Gaston



SOMESH GOYAL

The shy and elusive Western Tragopan *Tragopan melanocephalus* is found in Great Himalayan National Park, but it is not easy to photograph

et al. 1981; S. Sathyakumar, *pers. comm.* 2003). Bharal *Pseudois nayaur* is also found in the upper reaches of Tirthan and Sainj valleys (Fox 1987, Vinod & Sathyakumar 1999).

LAND USE

- Nature conservation and research
- Tourism and recreation
- Water management

THREATS AND CONSERVATION ISSUES

- Forest fires
- Construction of dams
- Grazing
- Firewood collection

Despite its large size and protected status, Great Himalayan NP is not free from human disturbance. There are three villages inside Sainj Wildlife Sanctuary which is part of GHNP. The initial notification of the park was made in 1984, which was followed by a long process of settlement of rights of herb collection and grazing. Great Himalayan National Park was finally declared as a national park in 1999 under the Wildlife (Protection) Act 1972 by the Himachal Pradesh Government vide No. FFE-B-F 2007. So, there are no settlements inside the park and it is free of rights or concessions of any kind. The park is naturally protected by

high peaks and ridges on its eastern, northern, and southern boundaries. There are about 160 villages (12 Panchayats or village councils) with about 14,000 people in the buffer zone (265 sq. km) on its western boundary. About Rs. 1.5 crores were paid as compensation to about 350 families which had recorded rights in the park area. Some poaching is known to occur, and a few cases have been registered. The locals are known to deliberately start fires in the forest area to catch escaping animals. On the pretext of settlement of people's rights, 10.6 sq. km of Jiwanal Valley was denotified in May 1999 to facilitate a hydroelectric project. (The Deodar-dominated forest of Jiwanal is extremely important for the Western Tragopan.) The final notification of the park (after settlement of rights in the designated park area of 750 sq. km) was made along with this denotification in May 1999.

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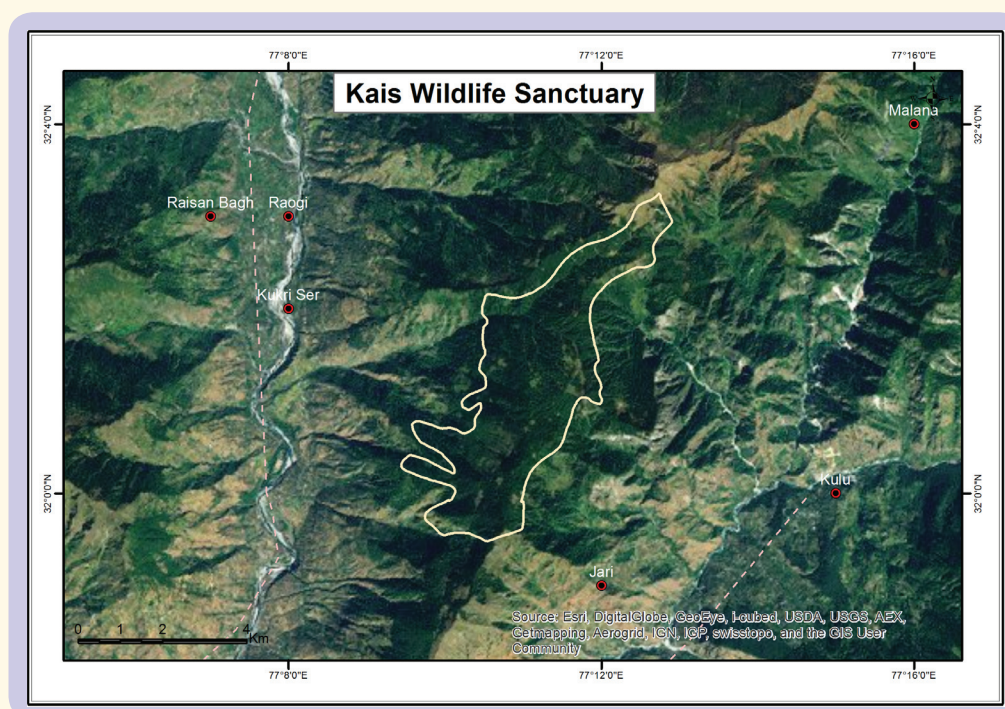
KAIS WILDLIFE SANCTUARY

IN-HP-09

IBA Site Code	: IN-HP-09	Altitude	: 2,800–3,680 msl
State	: Himachal Pradesh	Rainfall	: 1,071 mm
District	: Kullu	Temperature	: -5 °C to 30 °C
Coordinates	: 32° 02' 06" N, 77° 11' 42" E	Biogeographic Zone	: Himalaya
Ownership	: State	Habitats	: Sub-tropical Pine Forest, Montane Grassy Slopes, Alpine Moist Pasture
Area	: 1,419 ha		

IBA CRITERIA: A1 (Threatened species), A2 (Restricted-Range species)

PROTECTION STATUS: Wildlife Sanctuary, established February, 1954.



GENERAL DESCRIPTION

Kais Wildlife Sanctuary lies in the Kullu district of Himachal Pradesh. This small 1,419 ha high altitude sanctuary includes parts of the catchment of the Kais Nullah, an important tributary of the River Beas. It was declared mainly to protect the Musk Deer *Moschus chrysogaster* and pheasants, in 1954 under the then Punjab Wild Birds and Wild Animals Protection Act, 1933.

There is a lack of published information on the vegetation of Kais WLS. It is estimated that 1,174 ha of the total area is forested. Fir *Abies pindrow* and Spruce *Picea smithiana*, with some Oak *Quercus semecarpifolia*, Maple *Acer* sp., Poplar *Populus* sp., Walnut *Juglans regia*, and Cedar *Cedrus deodara* predominate at lower altitudes, while the alpine zone bears Birch *Betula utilis* and Rhododendron scrub forest.

AVIFAUNA

Practically no work has been done on the avifauna

of this sanctuary, although there is some information on the pheasants, for which it is famous. The globally Threatened Western Tragopan *Tragopan melanocephalus* and Cheer Pheasant *Catreus wallichii* are reported to be present (Singh *et al.* 1990). The more common species include Himalayan Monal *Lophophorus impejanus*, Kaleej Pheasant *Lophura leucomelana*, and Koklass Pheasant *Pucrasia macrolopha*. The Chukar Partridge *Alectoris chukar* is also present. This site is designated an IBA based on the presence of four Threatened pheasant species. Birds such as the Black Eagle *Ictinaetus malayensis*, Speckled Piculet *Picumnus innominatus*, Yellow-billed Blue Magpie *Urocissa flavirostris*, Black-throated Tit *Aegithalos concinnus*, Striated Prinia *Prinia crinigera*, Streaked Laughingthrush *Garrulax lineatus*, Plumbeous Water-redstart *Rhyacornis fuliginosa*, and Rufous-breasted Accentor *Prunella strophia* are seen here. However, a complete checklist of the birds of this site is not available and

VULNERABLE

Western Tragopan	<i>Tragopan melanocephalus</i>
Cheer Pheasant	<i>Catreus wallichii</i>

NEAR THREATENED

Himalayan Griffon	<i>Gyps himalayensis</i>
Alexandrine Parakeet	<i>Psittacula eupatria</i>

ENDEMIC BIRD AREA 128: WESTERN HIMALAYA

Western Tragopan	<i>Tragopan melanocephalus</i>
Cheer Pheasant	<i>Catreus wallichii</i>

we do not know how many restricted-range and biome species are found here. This site is considered as Data Deficient.

OTHER KEY FAUNA

Musk Deer is the most famous mammal of this Sanctuary, but its population has declined drastically due to poaching for its musk pod. Brown Bear *Ursus arctos* is seen in the subalpine and alpine areas, while Asiatic Black Bear *Ursus thibetanus* is found at lower altitudes. Himalayan Tahr *Hemitragus jemlahicus*, Barking Deer or Indian Muntjac *Muntiacus muntjak*, and Himalayan Brown Goral *Naemorhedus goral* are the major wild ungulates that have to share the limited resources of the area with a large number of domestic animals. Leopard *Panthera pardus* is sometimes found very close to villages and settlements, where it ventures in search of easy prey. Not much is known about the lesser carnivores of the sanctuary.

LAND USE

- Nature conservation and research
- Tourism and recreation
- Water management

THREATS AND CONSERVATION ISSUES

- Burning of vegetation
- Grazing
- Firewood collection

There are no villages inside the sanctuary, though there are many around it. The inhabitants have the right to graze domestic animals, and to collect fuel wood, medicinal plants, and minor forest produce. A shrine located inside the sanctuary attracts many pilgrims every year. The Forest Department issues permits to nomadic graziers to graze their livestock inside the sanctuary. There is a road inside the sanctuary, under the control of the Public Works Department.

KEY CONTRIBUTOR

Sanjeeva Pandey

KEY REFERENCE

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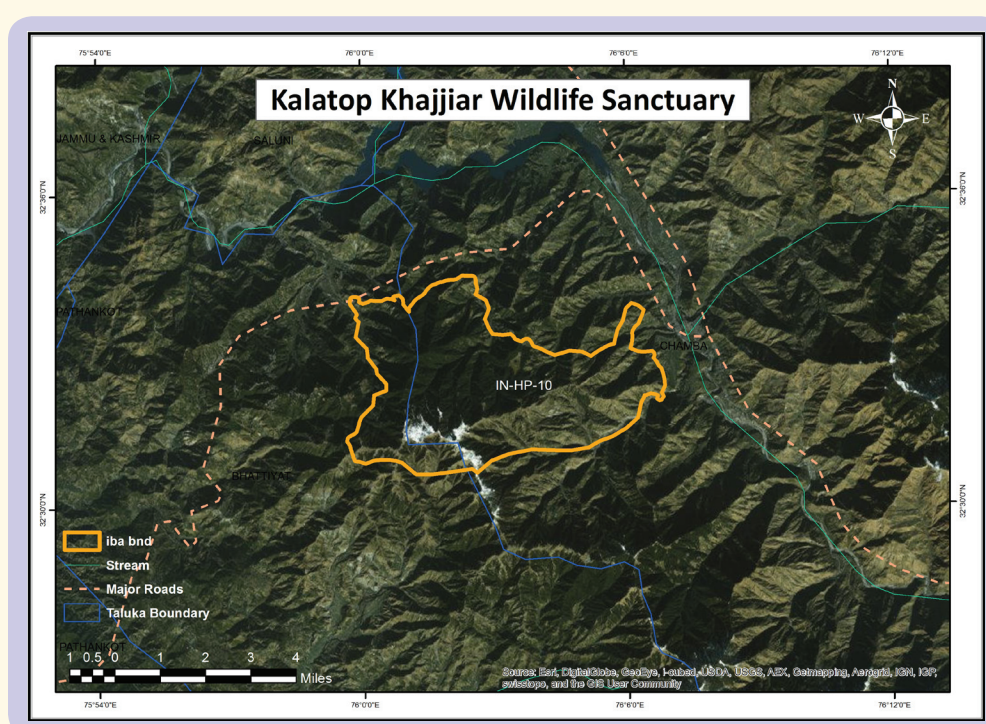
KALATOP KHAJJIAR WILDLIFE SANCTUARY

IN-HP-10

IBA Site Code	: IN-HP-10	Altitude	: 1,158 - 2,768 m
State	: Himachal Pradesh	Rainfall	: 2,647 mm
District	: Chamba	Temperature	: -10 °C to 35 °C
Coordinates	: 76°2'16.969"E 32°32'32.534"N	Biogeographic Zone	: Himalaya
Ownership	: State	Habitats	: Sub-alpine Forest, Sub-tropical Broad-leaved Hill Forest, Alpine Moist Pasture
Area	: 17.17 sq km		

IBA CRITERIA: A1 (Threatened species), A2 (Endemic Bird Area 128: Western Himalayas). Data Deficient.

PROTECTION STATUS: Wildlife Sanctuary, established in 1958.



GENERAL DESCRIPTION

The Sanctuary lies in the catchment area of the Beas River, and contains patches of good coniferous and Oak Forests. Khajjiar is a meadow, with a small lake in the centre, which is a popular tourist spot. The Sanctuary is drained by several tributaries of the Ravi River, which lies just north of it.

Most of the Sanctuary is forested, the main forest types being Ban Oak *Quercus incana*, Cedar *Cedrus deodara* and Western Mixed Coniferous, interspersed with alpine pasture (Department of Forest Farming and Conservation 1984). Cedar and Blue Pine *Pinus wallichiana* are predominant in lower altitude coniferous forest, and mixed with some Moru Oak *Quercus dilatata* and Rhododendron *Rhododendron arboreum*.

There are five wildlife sanctuary areas in Chamba district. Under the Rationalization of boundaries of PAs in

HP, human inhabited area of 51.83 sq km area of Kalatop Khajjiar sanctuary was excluded.

AVIFAUNA

Some 117 species of birds were recorded by Gaston *et al.* (1981a) in the Ravi Valley, including the Dalhousie-Chamba area. Singh and Banyal (2012a) have published a list of 77 species of birds belonging to 12 orders and 31 families. Koklass Pheasant *Pucrasia macrolopha* and Kaleej Pheasant *Lophura leucomelanos* are common. One or two Cheer Pheasant *Catreus wallichii* were heard calling at Khajjiar in November 1978, and January 1979 (Gaston *et al.* 1981b). The Himalayan Monal *Lophophorus impejanus* reportedly visits the site in winter (Gaston *et al.* 1981a, 1981b). Thakur *et al.* (2002) have reported 66 bird species but there would be many more. Practically no work has been done on the avifauna, so this site can be considered as Data Deficient.

VULNERABLE

Cheer Pheasant *Catreus wallichii*

NEAR THREATENED

Cinereous Vulture *Aegypius monachus*

ENDEMIC BIRD AREA 128: WESTERN HIMALAYA

Cheer Pheasant *Catreus wallichii*

OTHER KEY FAUNA

Almost all mammals of the high altitude areas of Himachal Pradesh are known to occur in Kalatop-Khajjair Sanctuary but their status and population structure is not known. Himalayan Serow *Capricornis thar* is found here though there are very few reports. Himalayan Brown Goral *Nemorhaedus goral* is also seen at slightly lower elevations, with Indian Muntjak *Muntiacus muntjak* and Leopard *Panthera pardus*.

Cyprinus carpio, an exotic fish from European rivers is found in Khajjiyar lake (Singh and Banyal 2013). A new record of *Rana liebigii* was also recorded by Singh and Banyal from the Khajjiyar Lake (2012b).

LAND USE

- Agriculture
- Nature conservation and research
- Tourism and recreation

THREATS AND CONSERVATION ISSUES

- Forest fire
- Livestock grazing
- Tourism
- Firewood collection, charcoal production

Kalatop-Khajjair WLS suffers from a long litany of problems, all related to humans. Grazing, collection of fuelwood and minor forest produce are permitted under the rights given to villagers. Medicinal plants are collected from all over the Sanctuary. About 50 villages surround this

WLS. Their collective impact on the fragile ecosystem can be imagined. Migratory graziers are issued permits. Trekking camps are regularly organised. Parts of the Sanctuary are used for roads, housing, and tree nurseries by various government departments (Singh *et al.* 1990).

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Sanjeeva Pandey, S. Sathyakumar, Murari Thakur

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- Links:
<http://timesofindia.indiatimes.com/city/chandigarh/775-Himachal-villages-excluded-from-sanctuary-areas/articleshow/26435686.cms> (As accessed on November 11, 2014)

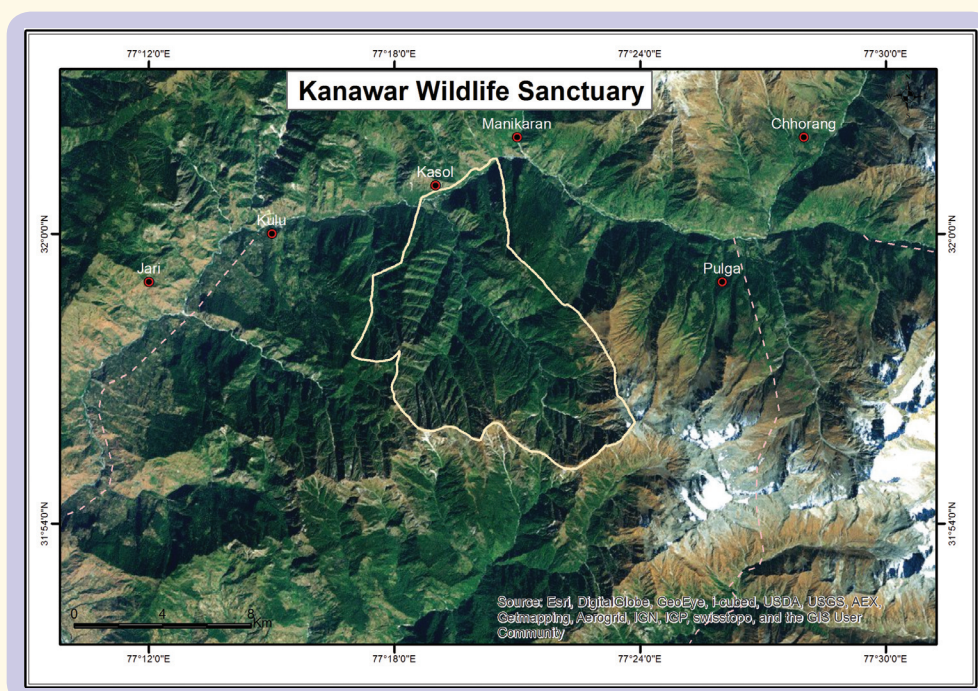
KANAWAR WILDLIFE SANCTUARY

IN-HP-11

IBA Site Code	: IN-HP-11	Altitude	: 1,800–4,833 m
State	: Himachal Pradesh	Rainfall	: 1,000 mm
District	: Kullu	Temperature	: -10 °C to 25 °C
Coordinates	: 31°55'30.779"N, 77°20'28.792"E	Biogeographic Zone	: Himalaya
Ownership	: State	Habitats	: Alpine Dry Pasture, Alpine Dry Scrub, Alpine Moist Pasture, Sub-tropical Broadleaf Hill Forest
Area	: 10,729 ha		

IBA CRITERIA: A1 (Threatened species), A2 (Endemic Bird Area 128: Western Himalayas)

PROTECTION STATUS: Wildlife Sanctuary, established in February, 1954.



GENERAL DESCRIPTION

This small Sanctuary is contiguous with the Great Himalayan National Park, another IBA of Himachal Pradesh. The terrain is steep, with deep valleys and rocky cliffs. The Sanctuary has an altitudinal variation from 1,800 m to nearly 5,000 m. There are two main mountain peaks, Satupurna (3,519 m) and Shacha (3,542 m). The Parvati river flows north of the Sanctuary. There are lakes and natural springs of religious and historical importance at Khirganga and Mantalai on the outskirts of the Sanctuary. There is also a temple and a *gurudwara* at Manikaran, adjacent to the Sanctuary (Singh *et al.* 1990).

Owing to its great altitudinal variation, seven forest types are present in this Sanctuary. Based on the classification of Champion and Seth (1968), they are Alpine Pastures, West Himalayan Sub-Alpine Forest, Kharsu Oak Forest, Moist Temperate Deciduous Forest, Western Mixed Coniferous

Forest, Moist Deodar Forest and Ban Oak Forest. The Moist Temperate Deciduous Forest is one of the few undisturbed fragments of this type extant in Himachal Pradesh.

AVIFAUNA

Good populations of two globally threatened species i.e. Western Tragopan *Tragopan melanocephalus* and Cheer Pheasant *Catreus wallichi* are found in this Sanctuary, due to which it was selected as an IBA. It also has many biome species. No detailed work has been done in this area on birds, but Singh *et al.* (1990) provided a preliminary list of 80 bird species recorded in the Sanctuary.

This site lies in the Western Himalayas Endemic Bird Area (EBA). In this EBA, 11 Restricted Range species have been listed, three are found in this IBA. According to BirdLife International (undated) classification of biomes, this site should come under Biome-7 (Sino-Himalayan Temperate

Forest), occurring from 1,800 m to 3,600 m, and Biome-5 (Eurasian High Montane), which occurs above 3,600 m. As we do not have good bird checklist, it is not known how many biome species assemblages are found in this IBA. This site certainly needs more detailed work to be done on bird distribution, abundance and densities.

VULNERABLE

Western Tragopan	<i>Tragopan melanocephalus</i>
Cheer Pheasant	<i>Catreus wallichi</i>

ENDEMIC BIRD AREA 128: WESTERN HIMALAYA

Western Tragopan	<i>Tragopan melanocephalus</i>
Cheer Pheasant	<i>Catreus wallichi</i>
White-cheeked Tit	<i>Aegithalos leucogenys</i>

There is a detailed bird list for the Great Himalayan National Park which is on the southern side of this WLS. This may be considered valid for the Kanawar Wildlife Sanctuary, newly created Khirganga National Park and Inderkila National Park in Kullu district. The creation of Khirganga NP (705 sq km) and Inderkila NP (94 sq km) is an outcome of an exercise of rationalization of boundaries of Protected Areas in Himachal Pradesh. This enhanced area under legal protection is contributing to the IBAs as well as biological diversity conservation of the Western Himalayas.

OTHER KEY FAUNA

The most important mammal of this Sanctuary is the Himalayan Tahr *Hemitragus jemlahicus*. At lower elevations, Leopard *Panthera pardus* is present, which mainly feeds on Himalayan Goral *Nemorhaedus goral*, and Barking Deer *Muntiacus muntjak*. The Snow Leopard *Uncia uncia* and Musk Deer *Moschus chrysogaster* occur on the high elevations near to the Great Himalayan National Park. The Asiatic Black Bear *Ursus thibetanus* is seen in temperate forests between 1,600 m and 3,500 m. The smaller predators are Yellow-throated Marten *Martes flavigula*, Himalayan Palm Civet *Paguma larvata*, Himalayan Weasel *Mustela sibirica*, Indian Red Fox *Vulpes vulpes*, and Golden Jackal *Canis aureus*. The Common Giant Flying Squirrel *Petaurista petaurista* is found in temperate forests at lower elevations in the Sanctuary (Singh *et al.* 1990).

LAND USE

- Nature conservation and research
- Tourism and recreation
- Urban transport
- Water management
- Human habitation

THREATS AND CONSERVATION ISSUES

- Construction of dams
- Burning of vegetation
- Livestock grazing
- Firewood collection
- Disturbance to birds
- Unsustainable exploitation

There are two villages within the Sanctuary, and 14 adjacent to it. Besides, there are many temporary settlements of graziers. Villagers have grazing rights inside the Sanctuary, as a result of which nearly 15,000 cattle graze there. The local people also have the right to extract fuelwood, and minor forest produce. Crop fields totaling about 200 ha are present inside the Sanctuary. Thus, the Sanctuary is under tremendous anthropogenic pressure. Both Snow Leopard and Leopard kill domestic livestock, especially in summer, resulting in man-animal conflict. Religious places adjacent to the Sanctuary also attract pilgrims, who put additional pressure on the natural resources as demand for fuelwood increases during *yatras* and festivals. In order to allow fresh growth of grass, graziers burn the grasslands. These fires go out of control and devastate large areas.

KEY CONTRIBUTOR

Sanjeeva Pandey.

KEY REFERENCES

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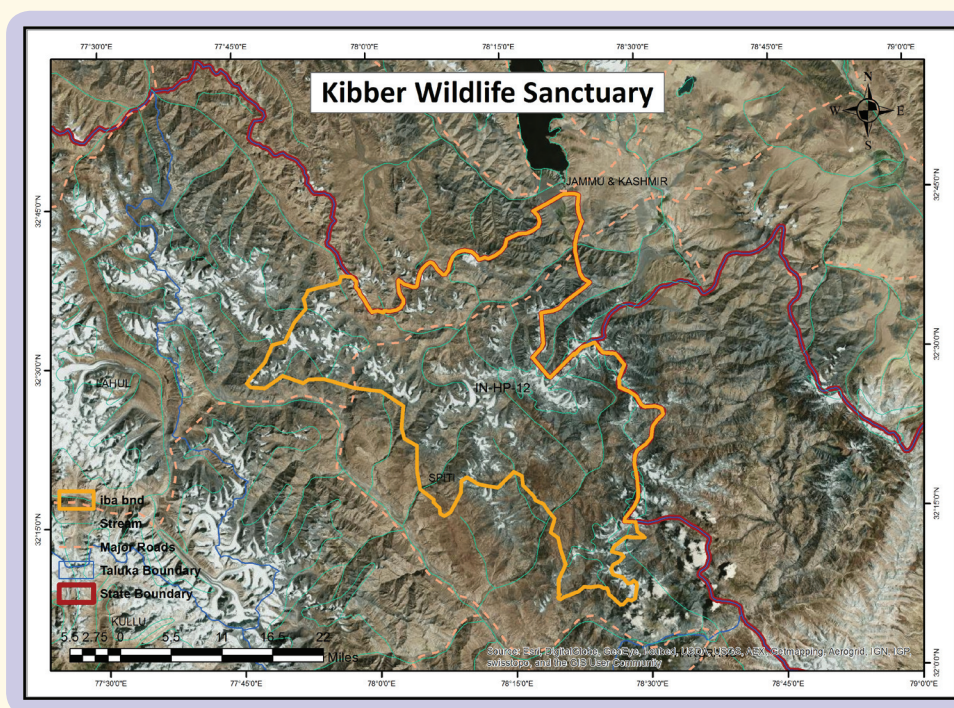
KIBBER WILDLIFE SANCTUARY

IN-HP-12

IBA Site Code	: IN-HP-12	Altitude	: 4,000–5,600 msl
State	: Himachal Pradesh	Rainfall	: 40–160 mm + heavy snowfall
District	: Lahaul- Spiti	Temperature	: -32 °C to 30 °C
Coordinates	: 32° 32' 42" N, 77° 36' 17" E	Biogeographic Zone	: Trans-Himalaya
Ownership	: State	Habitats	: Alpine Dry Scrub, Alpine Moist Pasture
Area	: 140,050 ha		

IBA CRITERIA: A3 (Biome-restricted assemblages). Data Deficient

PROTECTION STATUS: Wildlife Sanctuary, established April, 1992.



GENERAL DESCRIPTION

Kibber Wildlife Sanctuary in the Trans-Himalayan district of Lahaul- Spiti, is situated in the cold desert area of the Himalaya, and has the unique flora and fauna characteristic of this area. The area falls in the rain-shadow area of the Himalaya, so the rainfall is very low. Most of the moisture is provided by snow. Summer is extremely dry, while winter is extremely cold, with the mercury dropping to -32 °C.

Kibber WLS is administered from Kaza, the headquarters of Spiti subdivision. Kibber is also administered by the Director of Pin Valley NP (an IBA). The sanctuary is named after Kibber village, on its northern boundary.

The vegetation cover consists of two zones: Dry Temperate Zone (3,100–4,000 m), with woody species only in small patches, their value being leafy fodder, firewood, and timber. The main trees are *Juniperus macropoda*, *Salix* sp., and *Betula* sp. The herbaceous growth is remarkable for its

variety. In the Alpine Zone (4,000–5,000 m), most of the plants such as Junipers and Rhododendrons are small shrubs, growing amid large patches of bare ground. Shrubs include species of *Ephedra*, *Rheum*, *Rosularia*, *Rhodiola*, *Caragana*, and *Lindelia*. The grasses frequently met with are *Poa* and *Agropyron*, which are rich in nutritive value.

AVIFAUNA

Practically no work has been done on the avifauna of this sanctuary, except for stray observations made by Sanjeeva Pandey. Since the site is listed as Data Deficient. He sighted most of the high altitude birds such as Himalayan Snowcock *Tetraogallus himalayensis*, Golden Eagle *Aquila chrysaetos*, Lammergeier or Bearded Vulture *Gypaetus barbatus*, Himalayan Griffon *Gyps himalayensis*, Snow Pigeon *Columba leuconota*, Yellow-billed Chough *Pyrrhocorax graculus*, and others. Chukar Partridge *Alectoris chukar* is

common at lower elevations. This site is selected as an IBA on the basis of criteria A3 (Biome species) as it has most of the representative avifauna of the Indian part of Biome 5 (Eurasian High Montane), except perhaps the Vulnerable Black-necked Crane *Grus nigricollis*.

According to Sanjeeva Pandey (*pers. comm.* 2003), migratory waterfowl have been seen on passage through the passes and the valley.

According to BirdLife International (undated) classification of biomes, this site belongs to Biome 5 (Eurasian High Montane – Alpine and Tibetan) as it is in the Trans-Himalaya. Biome 5 is found above 3,600 m, which is also the altitudinal range of this IBA. Forty-eight bird species have been listed in Biome 5, out of which 13 have been seen in Kibber. Probably, many more species occur in this IBA.

NEAR THREATENED

Bearded Vulture	<i>Gypaetus barbatus</i>
Himalayan Griffon	<i>Gyps himalayensis</i>

BIOME 5: EURASIAN HIGH MONTANE

Himalayan Griffon	<i>Gyps himalayensis</i>
Himalayan Snowcock	<i>Tetraogallus himalayensis</i>
Snow Pigeon	<i>Columba leuconota</i>
Robin Accentor	<i>Prunella rubeculoides</i>
White-winged Redstart	<i>Phoenicurus erythrogaster</i>
Grandala	<i>Grandala coelicolor</i>
Tickell's Leaf-warbler	<i>Phylloscopus affinis</i>
Sulphur-bellied Warbler	<i>Phylloscopus griseolus</i>
Wallcreeper	<i>Tichodroma muraria</i>
Black-headed Mountain-finch	<i>Leucosticte brandti</i>
Great Rosefinch	<i>Carpodacus rubicilla</i>
Black-winged Snowfinch	<i>Montifringilla adamsi</i>
Yellow-billed Chough	<i>Pyrrhocorax graculus</i>

OTHER KEY FAUNA

The Endangered Snow Leopard *Panthera uncia*, locally known as Shin, is found in this sanctuary. Due to this predator, a few cases of livestock predation inside cowsheds are reported every year. The Snow Leopard's main wild prey is Asiatic Ibex *Capra sibirica* and Greater Blue Sheep or Bharal *Pseudois nayaur*. The Tibetan Wolf *Canis lupus chanco*, a subspecies found in the Tibetan highlands, is reported from this sanctuary. Locally, it is known as Shanko, hence its subspecific name. The Red Fox *Vulpes vulpes* is also present, in alpine and subalpine pastures, and around villages. It generally feeds on Woolly Hare *Lepus oiostolus*,

Himalayan Marmot *Marmota himalayana*, Indian or Royle's Pika *Ochotona roylei*, and on avifauna. The area is reputed for its lone sighting of Nayan *Ovis ammon hodgsoni*, a subspecies or race of Argali *Ovis ammon*, from the state of Himachal Pradesh (Sanjeeva Pandey, *pers. comm.* 2002). Wild Yak *Bos mutus*, called Dong Yak, are sometimes seen when they cross through the Parachhu river and stray into the Sutlej Valley and the catchment of Lingti river.

LAND USE

- Agriculture
- Pastures for livestock

THREATS AND CONSERVATION ISSUES

- Grazing
- Lopping of vegetation
- Military exercise
- Tourism
- Non-degradable waste

The preservation of vegetation is a major problem in Kibber WLS due to intensive grazing by goats, sheep, and domestic yak. In the prevailing geographical and climatic conditions, these animals are indispensable. The winter being extremely severe, the local people need fuel wood to keep their houses warm, hence the scanty vegetation becomes the major victim. The local people are aware of the fact that the root system in the plants growing in this harsh climate is more developed than the shoot system. Hence, in many instances, the entire plant is dug out and the roots are used as fuel wood. During summer, the local people, with the help of their yaks, collect any available plants in the area. The flat rooftops are well stacked with these bushes during summer when the daytime sun quickly dries up this fuel wood material. Poaching is not a major issue, as most of the people are Buddhists and do not kill animals. As the area lies on the international border, military and paramilitary forces regularly patrol the area and conduct exercises.

KEY CONTRIBUTOR

Sanjeeva Pandey

KEY REFERENCE

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KUGTI WILDLIFE SANCTUARY

IN-HP-13

IBA Site Code : IN-HP-13

State : Himachal Pradesh

District : Chamba

Coordinates : 32° 25' 13.217" N,
76° 44' 9.852" E

Ownership : State

Area : 40,549 ha

Altitude : 2,250–6,044 msl

Rainfall : 445 mm

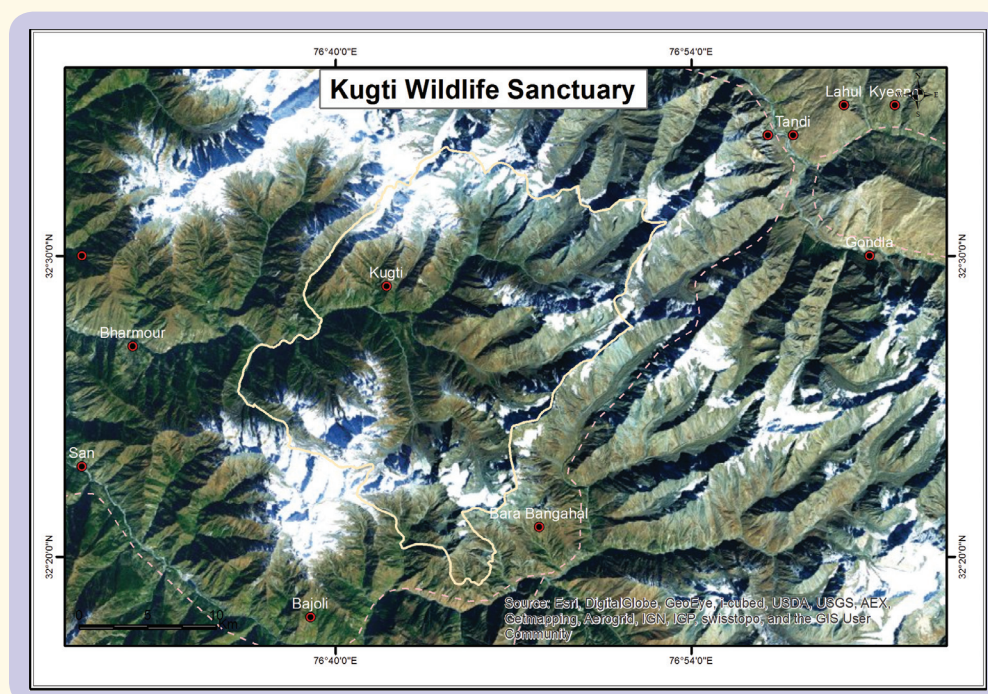
Temperature : -10 °C to 25 °C

Biogeographic Zone : Himalaya

Habitats : Sub-alpine Forest,
Alpine Moist Pasture,
Alpine Dry Pasture

IBA CRITERIA: A1 (Threatened species), A2 (Endemic Bird Area 128: Western Himalaya), A3 (Biome 5: Eurasian High Montane, Biome 7: Sino-Himalayan Temperate Forest). Data Deficient.

PROTECTION STATUS: Wildlife Sanctuary, established in 1962.



GENERAL DESCRIPTION

Kugti Wildlife Sanctuary in Chamba district is connected in the west by a forest corridor to Tundah Sanctuary, another IBA. Kugti has a diverse topography and abundant water sources, many of them originating from glaciers (Singh *et al.* 1990).

The nearest town is Bharmaur, c. 13 km away. It houses the famous Manimahesh temple, which attracts thousands of pilgrims, despite the difficult terrain and extreme cold conditions. The motorable road ends at Hadsar, a small village from which one has to trek to Kugti or Manimahesh temple.

According to the classification of Champion & Seth (1968), the vegetation consists of Alpine Pasture, Western Mixed Coniferous Forest, and Moist Deodar Forest. These forest types are seen at different altitudinal zones, sometimes

changing within a few hundred metres. High altitude coniferous forest is dominated by Fir *Abies pindrow*, with some mixed deciduous woodland, particularly at the bottom of the valley. Extensive stands of Cedar *Cedrus deodara* are seen, along with many species of Sino-Himalayan Temperate Forest (Biome 7). Similarly, subalpine forest and alpine scrub (Gaston *et al.* 1981a) provide good habitats to many mammals and birds. The Western Mixed Coniferous Forest component provides another habitat type for the birds.

The flora here comprises 496 species, with some rare and endangered species such as *Delphinium uncinatum*, *Erysimum thomsonii*, *Megacarpaea polyandra*, *Picrasma quasioides*, *Valeriana pyrolaefolia*, *Gentiana kuroo*, *Arnebia benthamii*, *Eremurus himalaicus*, and *Dactylorhiza hatagirea*. The south facing slope is characterized by secondary scrub and grassy slopes. Grass species here

include *Phaceleurus speciosus*, *Chrysopogon gryllus*, *Danthonia cachemyriana*, *Koeleria cristata*, *Andropogon munroi*, and *Themeda anathera*. The steeper north facing rocky slopes are largely clad with spruce and fir. At higher slopes these are replaced by Birch *Betula utilis* and *Rhododendron* (Rathore 2008).

AVIFAUNA

Not much work has been done on the bird fauna of Kugti WLS. Gaston *et al.* (1981a) have recorded 117 species in the Ravi Valley from Dalhousie and Chamba upwards. Three species of pheasants are found at different levels: Himalayan Monal *Lophophorus impejanus* is reported to be common (S. Sathyakumar, *pers. comm.* 2003), Koklass *Pucrasia macrolopha* is also numerous, and Cheer Pheasant *Catreus wallichii* has been recorded on the north side of Budhil Nullah, but not within the sanctuary (Gaston *et al.* 1981a, b). Sanjay Sondhi (unpublished tour report), during his survey in June 1997, recorded 40 species including many species of Biome 7 (Sino-Himalayan Temperate Forest, and some of Biome 5 (Eurasian High Montane – Alpine and Tibetan) and Biome 8 (Sino-Himalayan Subtropical Forest). Biome 8 species include Himalayan or Slaty-headed Parakeet *Psittacula himalayana*.

Kugti WLS is covered under the Western Himalaya Endemic Bird Area (EBA 128). This large EBA, ranging in altitude from 1,500 to 2,600 msl, with an area of c. 130,000 sq. km in Afghanistan, Pakistan, India, and Nepal, has

many globally Threatened and restricted-range species. In India, there are 11 restricted-range species of this EBA. Considering the undisturbed habitat available in Kugti WLS, some restricted-range species would have a considerable percentage of their overall numbers in this IBA alone. More research is required to study the abundance and density of different bird species. We consider this site as Data Deficient.

OTHER KEY FAUNA

The information on other fauna is also meager, except for the reports by Gaston *et al.* (1981a, 1983) which record Asiatic Black Bear *Ursus thibetanus*, Brown Bear *Ursus arctos*, Alpine Musk Deer *Moschus chrysogaster*, Himalayan Brown Goral *Naemorhedus goral*, Himalayan Serow *Capricornis thar*, Asiatic Ibex *Capra sibirica*, and Himalayan Tahr *Hemitragus jemlahicus*. Kugti is one of the best protected areas in Himachal Pradesh for Brown Bear (S. Sathyakumar, *pers. comm.* 2003). Other mammals listed by Singh *et al.* (1990) include the Leopard *Panthera pardus*, Leopard Cat *Prionailurus bengalensis*, Himalayan or Nepal Grey Langur *Semnopithecus schistaceus*, and Yellow-throated Marten *Martes flavigula*. In 2013, Snow Leopard *Panthera uncia* was sighted for the first time in this sanctuary at an altitude of 3,376 m.

LAND USE

- Nature conservation and research
- Tourism and recreation
- Urban transport
- Water management

THREATS AND CONSERVATION ISSUES

- Construction of dams
- Burning of vegetation
- Livestock grazing
- Firewood collection
- Disturbance to birds
- Pilgrims and annual fairs
- Soil erosion
- Human-animal conflicts

There are five wildlife sanctuary areas in Chamba district. Under the rationalisation of boundaries of PAs in Himachal Pradesh, villages taken out of the wildlife sanctuary areas include 19 sq. km. area of 18 villages in Tundah Sanctuary, 15.60 sq. km. area of 32 villages in Gamgul-Siyabhai Sanctuary, 8.81 sq. km. area of two villages of Kugti Sanctuary, 52.98 sq. km. area of five villages of Sechu-Tuan Sanctuary, and 51.83 sq. km. area of Kala Top Khajjiyar Sanctuary.

There are two villages and 10 settlements inside Kugti WLS, and nine villages in the surrounding areas. The inhabitants hold rights to fodder, fuel wood, cultivation,

VULNERABLE

Cheer Pheasant *Catreus wallichii*

NEAR THREATENED

Himalayan Griffon *Gyps himalayensis*

ENDEMIC BIRD AREA 128: WESTERN HIMALAYA

Cheer Pheasant *Catreus wallichii*

BIOME 5: EURASIAN HIGH MONTANE

Himalayan Griffon *Gyps himalayensis*

Snow Pigeon *Columba leuconota*

BIOME 7: SINO-HIMALAYAN TEMPERATE FOREST

Koklass Pheasant *Pucrasia macrolopha*
 Himalayan Monal *Lophophorus impejanus*
 Blue-capped Redstart *Phoenicurus caeruleocephalus*
 Streaked Laughingthrush *Garrulax lineatus*
 Variegated Laughingthrush *Garrulax variegatus*
 Large-billed Leaf-warbler *Phylloscopus magnirostris*
 Western Crowned Warbler *Phylloscopus occipitalis*
 Rusty-tailed Flycatcher *Muscicapa ruficauda*
 Ultramarine Flycatcher *Ficedula supercilialis*
 Dark-grey Tit *Parus rufonuchalis*
 Rufous-vented Tit *Parus rubidiventris*
 Spot-winged Tit *Parus melanolophus*
 Green-backed Tit *Parus monticolus*
 Pink-browed Rosefinch *Carpodacus rodochroa*
 Red-headed Bullfinch *Pyrrhula erythrocephala*

burial grounds, and religious activities. These activities till now did not have a major impact on the ecosystem, but increasing population pressure, from both humans and livestock, are having a negative impact. Hydel projects and transmission lines have permanently modified the landscape, and resulted in soil erosion. So-called natural disasters such as avalanches are becoming common, linked as they are to changes in the topography.

Brown Bear *Ursus arctos*, Asiatic Black Bear *Ursus thibetanus*, and other animals increasingly venture into human settlements and cultivated areas in search of food, and cause extensive damage to the agricultural and horticultural crops, kill livestock, and attack humans (Rathore 2008).

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http://www.wti.org.in/oldesite/current-news/130109_first_snow_leopard_recorded_in_kugti_wildlife_sanctuary.html (As accessed on November 11, 2014).

LIPPA ASRANG WILDLIFE SANCTUARY

IN-HP-14

IBA Site Code	: IN-HP-14	Altitude	: 4,000–5,022 msl
State	: Himachal Pradesh	Rainfall	: 226 mm
District	: Kinnaur	Temperature	: -10 °C to 15 °C
Coordinates	: 31° 43' 44" N, 78° 20' 45" E	Biogeographic Zone	: Himalaya
Ownership	: State	Habitats	: Himalayan Dry Temperate Forest, Alpine Arid Pasture, Alpine Dry Scrub
Area	: 3,100 ha		

IBA CRITERIA: A3 (Biome 5: Eurasian High Montane). Data Deficient.

PROTECTION STATUS: Wildlife Sanctuary, established in September, 1962.



GENERAL DESCRIPTION

This high altitude sanctuary lies c. 28 km from Morang, the nearest town, in Kinnaur district. The sanctuary can be reached by a motorable road up to a village called Jangi, and then onward on foot. Much of this sanctuary is a plateau with barren cold desert. Lippa Asrang is one of the few sanctuaries in India where feral Yak *Bos mutus* has been reported.

AVIFAUNA

There is practically no literature on birds from this IBA. Most of Lippa Asrang WLS is closed to tourists, and there are few visitors. As the sanctuary represents undisturbed alpine habitat, most of the birds of Biome 5 are present, hence it was selected as an IBA. We are treating this as a Data Deficient site.

OTHER KEY FAUNA

Mammals reportedly include the Asiatic Black Bear *Ursus thibetanus*, Brown Bear *Ursus arctos*, Alpine Musk Deer *Moschus chrysogaster*, Himalayan Brown Goral *Naemorhedus goral*, Asiatic Ibex *Capra sibirica*, Greater Blue Sheep *Pseudois nayaur*, and Wild Yak *Bos mutus* (Singh *et al.* 1990).

LAND USE

- Grazing
- Research and nature conservation

THREATS AND CONSERVATION ISSUES

- Grazing

This sanctuary is far from human habitation and has very

DHRITIMAN MUKHERJEE



Lippa Asrang is a Data Deficient site, but considering its undisturbed habitat, it was suggested as an IBA. It has typical high altitude flora and fauna. Himalayan Snowcock *Tetraogallus himalayensis* is fairly common in this IBA

BIOME: 5 (EURASIAN HIGH MONTANE)	
Himalayan Griffon	<i>Gyps himalayensis</i>
Himalayan Snowcock	<i>Tetraogallus himalayensis</i>
Tibetan Partridge	<i>Perdix hodgsoniae</i>
Ibisbill	<i>Ibidorhyncha struthersii</i>
Tibetan Sandgrouse	<i>Syrrhaptes tibetanus</i>
Snow Pigeon	<i>Columba leuconota</i>
Yellow-billed Chough	<i>Pyrrhocorax graculus</i>

few visitors due to its barren, cold desert plateau habitat. Grazing of livestock takes place, which is unsustainable due to the fragile ecosystem. Otherwise, little can be said without data regarding conservation issues.

Another imminent threat is the Kashang hydroelectric power project across Kashang and Kerang streams in Kinnaur district. This project will cover a small area outside the core and buffer zone of this IBA.

KEY CONTRIBUTOR

Sanjeeva Pandey

KEY REFERENCES

Singh, S., Kothari, A., and Pande, P. (Eds) (1990) *Directory of National Parks and Sanctuaries in Himachal Pradesh: Management status and profiles*. Indian Institute of Public Administration, New Delhi. Pp. 51–53.

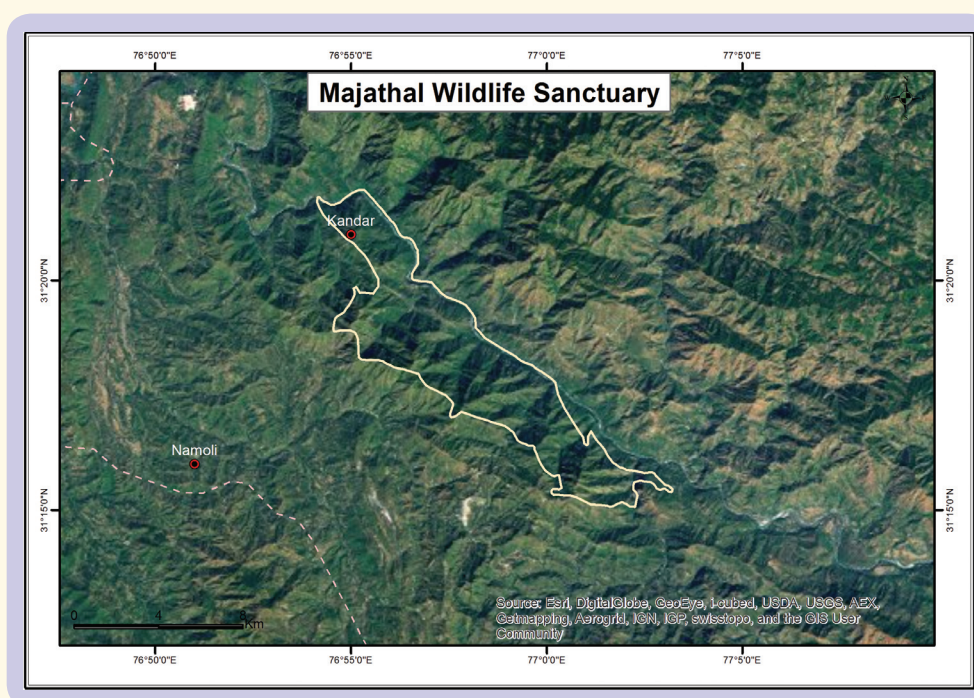
MAJATHAL WILDLIFE SANCTUARY

IN-HP-15

IBA Site Code	: IN-HP-15	Area	: 3,086 ha
State	: Himachal Pradesh	Altitude	: 575–1,985 msl
District	: Solan, Shimla	Rainfall	: 1,040 mm
Coordinates	: 31° 17' 43.518" N, 76° 58' 38.582" E	Temperature	: -1 °C to 29 °C
Ownership	: State	Biogeographic Zone	: Himalaya
		Habitats	: Himalayan Dry Temperate Forest

IBA CRITERIA: A1 (Threatened species), A2 (Endemic Bird Area 128: Western Himalaya). Data Deficient.

PROTECTION STATUS: Wildlife Sanctuary, established in 1954.



GENERAL DESCRIPTION

Majathal Wildlife Sanctuary, located in Shimla and Solan districts, is part of the catchment area of the Sutlej river. It is bounded to the north by the Sutlej and to the south by a mountain ridge. The sanctuary comprises a short section of the southern slopes of the Sutlej Valley, and has steep terrain. Places of religious interest include the Harsingh Temple (Singh *et al.* 1990). The sanctuary may be one of the most important sites in Himachal Pradesh for Cheer Pheasant *Catreus wallichii*, and the only site present within the Sutlej catchment. Seven species of galliforms have been reported from this area (Mishra 1996). Chir Pine *Pinus roxburghii* and Ban Oak *Quercus leucotrichophora* forests, and subtropical *Euphorbia* scrub are the major vegetation types (Mishra 1996). The slopes are sparsely forested with Chir Pine and Ban Oak, and mostly dominated by grassy tracts, often extending continuously from the ridge-tops down to c. 1,000 m (Garson 1983).

AVIFAUNA

Not much work has been done on the birdlife of this interesting site, which covers a tract of Himalayan Subtropical forest. Mishra (1996), during his studies on the Goral from November 1992 to May 1993, counted 106 species of birds, including the globally Threatened Cheer Pheasant. He also recorded Kaleej Pheasant *Lophura leucomelana* and Koklass *Pucrasia macrolopha*. Recently, Shah *et al.* (2002) have worked on the Black Francolin *Francolinus francolinus*, a common galliform.

The main biome represented in Majathal IBA is Biome 8 (Sino-Himalayan Subtropical Forest), which occurs between 1,000 and 2,000 m. Nine species of this biome have been listed by Mishra (1996), but none of them are of conservation concern.

This IBA lies in the Western Himalaya Endemic Bird Area (EBA 128). As we do not have a detailed checklist of this site, it is likely that there would be some more restricted-

range species, especially small forest birds, than we know as of now. Presently, we consider this a Data Deficient site.

OTHER KEY FAUNA

The mammalian fauna includes Leopard *Panthera pardus*, which is the top predator (Mishra 1993). Asiatic Black Bear *Ursus thibetanus*, Golden Jackal *Canis aureus*, Common Palm Civet *Paradoxurus hermaphroditus*, Himalayan Palm Civet *Paguma larvata*, Yellow-throated Marten *Martes flavigula*, and Jungle Cat *Felis chaus* are other carnivores. Sambar *Rusa unicolor*, Barking Deer *Muntiacus muntjak*, Himalayan Brown Goral *Naemorhedus goral*, and Wild Boar *Sus scrofa* represent the ungulates.

LAND USE

- Agriculture
- Grazing
- Collection of timber, fuel wood, fodder, and minor forest produce
- Tourism and recreation
- Nature conservation and research

THREATS AND CONSERVATION ISSUES

- Human settlements
- Disturbance due to pilgrims
- Tourism and recreation
- Forest fire
- Poaching

According to Mishra (1996), 17 settlements with a population of about 650 inhabitants are present inside the Sanctuary. They hold rights to cultivate, graze livestock, and collect fodder, timber, fuel wood, and minor forest produce. Crop damage by ungulates and livestock killing by Leopard and Black Bear create resentment against the sanctuary among the villagers. Besides the local people, nomads also come during winter from the higher reaches to graze their livestock, which exerts further pressure on the limited resources of the sanctuary. Graziers start forest fires to get better grass for livestock.

A temple is located in the sanctuary which attracts thousands of pilgrims. The Himachal state government has started a project to provide drinking water to 100 villages in the western part of the sanctuary. One of the major threats is the establishment of a cement manufacturing plant just outside Majathal WLS.

Poaching is quite common. Mishra (1996) found 39 gun licence holders, and many unlicensed guns. Ungulates and pheasants are their major targets, as they provide good meat for the table.

Kol Dam is the newest threat to this sanctuary. The state government, along with the National Thermal Power Corporation (NTPC), submitted a proposal for the diversion of 124.054 ha forest land from this IBA for the 800-MW Kol Dam project. This hazardous plan involved submerging

CRITICALLY ENDANGERED

White-rumped Vulture	<i>Gyps bengalensis</i>
Red-headed Vulture	<i>Aegypius calvus</i>

ENDANGERED

Egyptian Vulture	<i>Neophron percnopterus</i>
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VULNERABLE

Cheer Pheasant	<i>Catreus wallichii</i>
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NEAR THREATENED

Cinereous Vulture	<i>Aegypius monachus</i>
Himalayan Griffon	<i>Gyps himalayensis</i>
Bearded Vulture	<i>Gypaetus barbatus</i>

BIOME 5: EURASIAN HIGH MONTANE (ALPINE AND TIBETAN)

Himalayan Griffon	<i>Gyps himalayensis</i>
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BIOME 7: SINO-HIMALAYAN TEMPERATE FOREST

Koklass Pheasant	<i>Pucrasia macrolopha</i>
White-tailed Nuthatch	<i>Sitta himalayensis</i>
Streaked Laughingthrush	<i>Garrulax lineatus</i>
Variegated Laughingthrush	<i>Garrulax variegatus</i>
Rufous-breasted Accentor	<i>Prunella strophiaata</i>
Himalayan Greenfinch	<i>Carduelis spinoides</i>

BIOME 8: SINO HIMALAYAN SUBTROPICAL FOREST

Blue-throated Barbet	<i>Megalaima asiatica</i>
Slaty-headed Parakeet	<i>Psittacula himalayana</i>
Black-headed Jay	<i>Garrulus lanceolatus</i>
Grey Treepie	<i>Dendrocitta formosae</i>
Black-throated Tit	<i>Aegithalos concinnus</i>
Himalayan Bulbul	<i>Pycnonotus leucogenys</i>
Grey-hooded Warbler	<i>Phylloscopus xanthoschistos</i>
Rusty-cheeked Scimitar-babbler	<i>Pomatorhinus erythrogenys</i>

ENDEMIC BIRD AREA 128: WESTERN HIMALAYA

Cheer Pheasant	<i>Catreus wallichii</i>
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more than 50,000 trees and endangering the Vulnerable Cheer Pheasant. Hence the project was rejected by the Ministry of Environment and Forests in 2010. But in 2013, the project resurfaced with the clearance for diversion of land.

Apart from this, the upcoming cement plant in the vicinity of Majathal WLS is also an imminent threat.

KEY CONTRIBUTOR

Charudutt Mishra.

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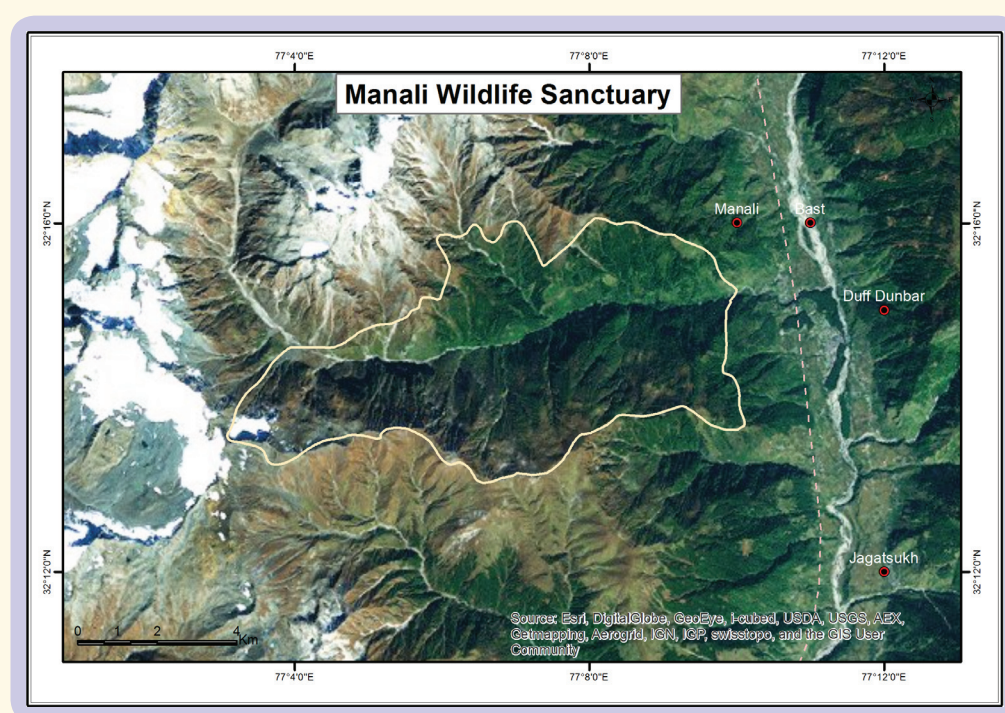
MANALI SANCTUARY

IN-HP-16

IBA Site Code	: IN-HP-16	Area	: 2,900 ha
State	: Himachal Pradesh	Altitude	: 2,273 – 5,173 m
District	: Kullu	Rainfall	: 1,080 mm
Coordinates	: 77°7'40.319"E, 32°14'29.782"N	Temperature	: -4 °C to 30 °C
Ownership	: State	Biogeographic Zone	: Himalaya
		Habitats	: Sub-tropical Pine Forest

IBA CRITERIA: A1 (Threatened species), A2 (Endemic Bird Area 128: Western Himalayas), A3 (Biome-5: Eurasian High Montane; Biome-7: Sino-Himalayan Temperate Forest; Biome-8: Sino-Himalayan Subtropical Forest)

PROTECTION STATUS: Wildlife Sanctuary, established in February 1954.



GENERAL DESCRIPTION

Manali is a popular tourist resort in Himachal Pradesh, due to its spectacular scenery, but not many people, even officials, know that there is a little-known 3,180 ha Manali Wildlife Sanctuary, notified as long ago as 1954 under the Punjab Birds and Wild Animals Protection Act, 1933. After the recent exercise of Rationalization of Boundaries of Protected Areas, this sanctuary is reduced to a mere 2,900 ha in size. It was mainly established to safeguard the catchment area of Manalsu *Nullah*, an important tributary of the Beas River. The Manali Sanctuary and adjoining forested areas provide good habitats for many pheasant species, even though the Forest Department had planted many non-native species such as Poplar, Willow and Robinia.

The vegetation type, as classified by Champion and Seth (1968) is as follows: Alpine Pastures, Kharsu Oak

Forest, Moist Temperate Deciduous Forest, Western Mixed Coniferous Forest, Moist Deodar Forest and Ban Oak Forest. Juniper *Juniperus communis* is present above the tree-line, along with Rhododendron.

AVIFAUNA

At least 149 species of birds have been recorded from the Manali area (Gaston *et al.* 1981). Western Tragopan *Tragopan melanocephalus*, Himalayan Monal *Lophophorus impejanus*, and Koklass Pheasant *Pucrasia macrolopha* are present in small numbers. Based on their surveys in 1979-1980, Gaston *et al.* (1981) estimate about 50 Western Tragopan. The Monal population is much larger, in the range of 250 pairs. Koklass is the most abundant large pheasant species in this Park, common at the lower end of Hamta *Nullah* and Solang *Nullah*. This site is selected as an IBA

mainly because of its good population of globally threatened Western Tragopan.

Historically, the Manali Sanctuary had Cheer Pheasant *Catreus wallichii*, even as late as the 1980s. Its status since then is not known, mainly due to lack of proper surveys. As the Cheer Pheasant can survive in slightly disturbed habitat (Kaul 1989, Garson *et al.* 1992, BirdLife International 2001), it could still be surviving in Manali Sanctuary despite the pressure from tourists (R. Kaul *in litt.* 2003).

At higher reaches in the alpine zones, Himalayan Snowcock *Tetraogallus himalayensis* and Snow Partridge *Lerwa lerwa* are seen, representing Biome-5 species.

ENDANGERED	
Saker Falcon	<i>Falco cherrug</i>
VULNERABLE	
Eastern Imperial Eagle	<i>Aquila heliaca</i>
Western Tragopan	<i>Tragopan melanocephalus</i>
NEAR THREATENED	
Cinereous Vulture	<i>Aegypius monachus</i>
ENDEMIC BIRD AREA 128: WESTERN HIMALAYAS	
Western Tragopan	<i>Tragopan melanocephalus</i>
BIOME- 5: EURASIAN HIGH MONTANE	
Snow Partridge	<i>Lerwa lerwa</i>
Himalayan Snowcock	<i>Tetraogallus himalayensis</i>
Grandala	<i>Grandala coelicolor</i>
BIOME-7: SINO-HIMALAYAN TEMPERATE FOREST	
Koklass Pheasant	<i>Pucrasia macrolopha</i>
Himalayan Monal	<i>Lophophorus impejanus</i>
Bar-throated Minla	<i>Minla strigula</i>
Rufous-bellied Niltava	<i>Niltava sundara</i>
Green-backed Tit	<i>Parus monticolus</i>
Black-and-yellow Grosbeak	<i>Mycerobas icteroides</i>
BIOME-8: SINO-HIMALAYAN SUBTROPICAL FOREST	
Blue-capped Rock-thrush	<i>Monticola cinclorhynchus</i>
Grey-winged Blackbird	<i>Turdus boulboul</i>

OTHER KEY FAUNA

Of larger mammals, 18 species have been recorded in the Manali area (Gaston *et al.* 1981, 1983, Singh *et al.* 1990). These include the Asiatic Black Bear *Ursus thibetanus*, Brown Bear *Ursus arctos*, Leopard *Panthera pardus*, Musk Deer *Moschus chrysogaster*, and Serow *Nemorhaedus sumatraensis*. Smaller carnivores include the Jungle Cat *Felis chaus*, Himalayan Palm Civet *Paguma larvata* and Yellow-throated Marten *Martes flavigula*. Not much information is available on reptiles, amphibians and fish.

LAND USE

- Tourism and recreation
- Nature conservation and research

THREATS AND CONSERVATION ISSUES

- Livestock grazing
- Collection of fuel wood, timber, forest products
- Extraction of fodder
- Tourism and recreation

The Sanctuary forms part of the catchment of Manalsu *Nullah*, an important tributary of the River Beas. It is particularly important as a refuge for Western Tragopan (Gaston *et al.* 1981). People from nearby villages have rights to graze livestock, extract fodder, fuel wood, timber and minor forest produce and quarrying. Semi-nomadic *Gujjars* and *Gaddis* also have grazing rights.

Rodgers and Panwar (1988) had recommended that Manali Sanctuary which is only 2,900 ha be extended to 25,000 ha by including the still viable habitat to the north, including the Solang *Nullah* watershed to the source of the Beas river.

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Sanjeeva Pandey and S. Sathyakumar.

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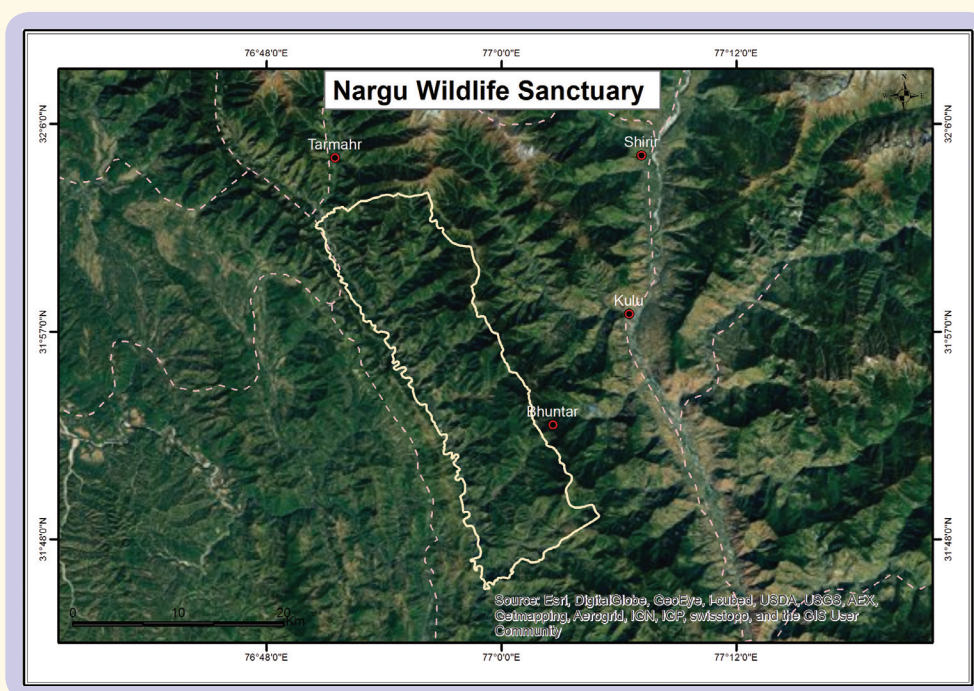
NARGU WILDLIFE SANCTUARY

IN-HP-17

IBA Site Code	: IN-HP-17	Altitude	: 970–4,034 msl
State	: Himachal Pradesh	Rainfall	: 1,3230 mm
District	: Mandi	Temperature	: 10 °C to 35 °C
Coordinates	: 32° 3' 42.712" N, 76° 57' 20.513" E	Biogeographic Zone	: Himalaya
Ownership	: State	Habitats	: Himalayan Moist Temperate Forest, Sub-alpine Forest, Subtropical Pine Forest
Area	: 13,237 ha		

IBA CRITERIA: A3 (Biome 7: Sino-Himalayan Temperate Forest), Data Deficient

PROTECTION STATUS: Wildlife Sanctuary, established in 1962.



GENERAL DESCRIPTION

Nargu is one of the most densely populated protected areas of Himachal Pradesh, with human density above 100 per sq. km and livestock density 200 per sq. km. Interestingly, all legal procedures such as the final notification for declaration of the sanctuary have been completed. People have already occupied most of the level areas and cultivable portions, leaving only the inaccessible reaches for wildlife. Livestock graze all over the sanctuary.

Based on the classification of Champion & Seth (1968), eight types of vegetation can be seen in this area: i. A small portion of Sub-alpine Forest in the higher reaches, followed by ii. Kharsu Oak Forest, iii. Moist Temperate Deciduous Forest, iv. Western Mixed Coniferous Forest, v. Moist Deodar Forest, vi. Moru Oak Forest, vii. Ban Oak Forest, and finally viii. Subtropical Pine Forest.

An area of 278.38 sq. km was declared as Nargu WLS

on October 23, 1999. Further, an area of 63.413 sq. km was included, and 209.4285 sq. km with 88 villages was denotified on November 21, 2013 as part of an exercise to rationalize the sanctuary. Thus, after rationalization, 132.3730 sq. km remains in the sanctuary.

AVIFAUNA

There is no information on the birdlife, although unconfirmed reports indicate that Western Tragopan *Tragopan melanocephalus* and Cheer Pheasant *Catreus wallichi* are found. Four species listed in Biome 7 have been identified, but there may be many more. This site is listed as an IBA due to its potential as habitat for Cheer Pheasant and biome species.

OTHER KEY FAUNA

Asiatic Black Bear *Ursus thibetanus*, Leopard *Panthera pardus*, Himalayan Palm Civet *Paguma larvata*, Barking

BIOME 7: SINO-HIMALAYAN TEMPERATE FOREST

Golden Bush-robin	<i>Tarsiger chrysaeus</i>
White-throated Laughingthrush	<i>Garrulax albogularis</i>
Striated Laughingthrush	<i>Grammatoptila striata</i>
Streaked Laughingthrush	<i>Garrulax lineatus</i>
Variegated Laughingthrush	<i>Garrulax variegatus</i>
Rufous-bellied Niltava	<i>Niltava sundara</i>
White-browed Rosefinch	<i>Carpodacus thura</i>

Deer *Muntiacus muntjak*, Alpine Musk Deer *Moschus chrysogaster*, and Himalayan Brown Goral *Naemorhedus goral* are still found in remote areas, but their conservation status is unknown. Not much is known about the reptiles and other fauna of this potential IBA.

Kumar & Mattu (2014) have listed 39 species of butterflies from Mandi district, including Tawny Mime *Chilasa agestor govindra*, Common Blue Apollo *Parnassius hardwickei hardwickei*, Large Cabbage White *Pieris brassicae nepalensis*, Dark Clouded Yellow *Colias electo fieldi*, Striped Blue Crow *Euploea mulciber mulciber*, Great Satyr *Aulocera padma padma*, and Himalayan Sailer *Neptis mahendra*.

LAND USE

- Agriculture
- Collection of firewood, other forest products
- Grazing of livestock

THREATS AND CONSERVATION ISSUES

- Human settlements
- Forest fire, natural and man-induced
- Intense grazing pressure
- Human settlements

Anthropogenic pressure is the major issue. After the rationalisation of boundaries of PAs in Himachal Pradesh, most of the 170 villages are now on the periphery of the sanctuary. There are 170 villages inside the sanctuary, with a population of nearly 50,000 and thrice as many heads of livestock. Furthermore, itinerant graziers visit the sanctuary in summer with huge herds of livestock. Local people are allowed fuel wood and medicinal plant collection. Musk Deer is hunted by organized gangs of poachers. Motorable roads have been constructed within the sanctuary. Logging of trees is another serious problem that this sanctuary is facing.

As per recommendation of Rodgers & Panwar (1988) and Rodgers *et al.* (2000), Nargu WLS is now contiguous with the Khokhan WLS on its southern site. This has been done through the exercise of the rationalisation of boundaries of PAs in Himachal Pradesh..

KEY CONTRIBUTOR

S. Sathyakumar.

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PIN VALLEY NATIONAL PARK

IN-HP-18

IBA Site Code : IN-HP-18

State : Himachal Pradesh

District : Lahaul & Spiti

Coordinates : 32° 01' 60" N,
77° 52' 60" E

Ownership : State

Area : 67,500 ha

Altitude : c. 4,300 msl

Rainfall : 170 mm

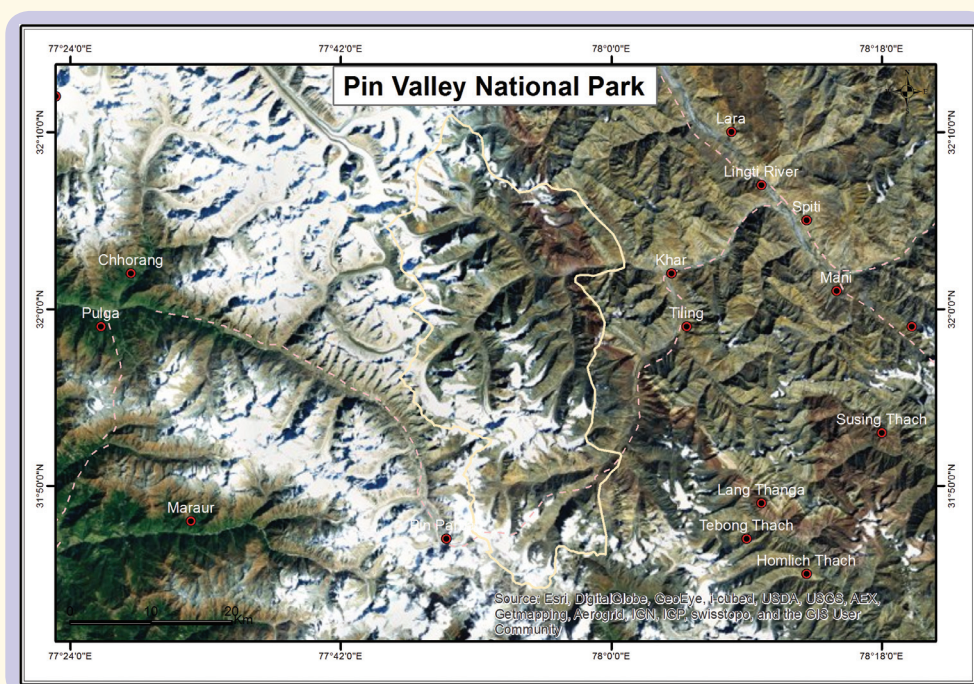
Temperature : -30 °C to 30 °C

Biogeographic Zone : Trans-Himalaya

Habitats : Alpine Dry Pasture

IBA CRITERIA: A3 (Biome 5: Eurasian High Montane)

PROTECTION STATUS: National Park, established in 1958.



GENERAL DESCRIPTION

Pin Valley National Park is located in the Spiti subdivision of Lahaul & Spiti district. High mountain ranges and narrow river valleys are typical of the area, where flat land is uncommon. According to the biogeographic classification of Rodgers & Panwar (1988), Pin Valley lies in the Northwest Himalayan Zone. The Sutlej river divides this IBA into two provinces, namely northwest and west. Spiti is a typical mountain desert, with massive glaciers covering a major portion of the park, which has no major lake. The mountainsides are bare, except for a few mountain folds where some vegetation manages to grow in protected niches. The terrain and the climate are antagonistic to the growth of forests in this area. Precipitation is mainly in the form of snowfall. The general topography is highly rugged, with high altitude barren areas and an arid climate.

The drainage system is made up of five rivulets, namely

Kidul Cho, Khaminger, Debsa, Kilung, and Pin. The first four rivulets join to become the Parahio river in the main valley. Glaciers feed all these rivulets.

Light tremors occasionally occur in the park, as Lahaul & Spiti district lies in a major earthquake prone area, i.e., the alpine Himalayan mountain system. This park adjoins the buffer zone of the Great Himalayan National Park to the west and shares its southern boundary with Ruppi-Bhabha WLS (another IBA). The valleys in the park are highly disturbed because of the intensive grazing pressure.

Pin Valley NP is a typical cold desert ecosystem (Rawat *et al.* 1992, Anon. 2010). According to the classification of Champion & Seth (1968), the vegetation comes under Dry Alpine Scrub and Dwarf Juniper. *Berberis vulgaris* and *Lonicera* sp. are the important shrubs. A few thorny trees and bushes are found in the vicinity of the villages.

There are a number medicinal plants in Lahaul & Spiti,

such as *Arnebia euchroma* which is a Critically Endangered medicinal plant, *Allium blandum*, *Dracocephalum heterophyllum*, *Cousinia thomsonii*, and *Heracleum thomsonii* (Singh *et al.* 2012).

Intention to establish Pin Valley National Park was notified by the Government of Himachal Pradesh on January 9, 1987. Even after almost 30 years, the state government is still in the process of settlement of rights of local people in the designated Park area. When the area is without any rights or concessions, only then it can be called as a National Park.

On the request of the Himachal Pradesh Forest Department the Nature Conservation Foundation (NCF), Mysore prepared a Management Plan for the Upper Spiti Landscape (USL) in which they listed 100 bird species from the major part of Spiti Valley including Pin Valley NP. Sanjeeva Pandey (*pers. comm.* 2014) has suggested to include the whole Upper Spiti Landscape as an Important Bird Area in Trans Himalayas.

AVIFAUNA

Not many studies have been done on the avifauna of the national park, since it is situated at such a high altitude and also because of its cold desert climate. The site falls under Biome 5 (Eurasian High Montane). The key habitats of the

NEAR THREATENED	
Bearded Vulture	<i>Gypaetus barbatus</i>
Himalayan Griffon	<i>Gyps himalayensis</i>
Cinereous Vulture	<i>Aegypius monachus</i>
BIOME 5: EURASIAN HIGH MONTANE	
Himalayan Griffon	<i>Gyps himalayensis</i>
Himalayan Snowcock	<i>Tetraogallus himalayensis</i>
Tibetan Partridge	<i>Perdix hodgsoniae</i>
Ibisbill	<i>Ibidorhyncha struthersii</i>
Snow Pigeon	<i>Columba leuconota</i>
White-winged Redstart	<i>Phoenicurus erythrogastrus</i>
Common Great Rosefinch	<i>Carpodacus rubicilla</i>
Yellow-billed Chough	<i>Pyrrhocorax graculus</i>
White-winged Redstart	<i>Phoenicurus erythrogastrus</i>
Hume's Short-toed Lark	<i>Calandrella acutirostris</i>
Tibetan Snowfinch	<i>Montifringilla adamsi</i>
White-rumped Snowfinch	<i>Pyrgilauda taczanowskii</i>
Robin Accentor	<i>Prunella rubeculoides</i>
Brown Accentor	<i>Prunella fulvescens</i>
Plain Mountain Finch	<i>Leucosticte nemoricola</i>
Great Rosefinch	<i>Carpodacus rubicilla</i>
Red-fronted Rosefinch	<i>Carpodacus puniceus</i>

site are scrub and open habitats at and above the tree line, including alpine and sub-alpine scrub and grassland, inland cliffs and rocky slopes, montane wetlands, and some gravel and sand plains, where Himalayan Snowcock *Tetraogallus*



High mountain ranges and narrow river valleys are typical of Pin Valley National Park

IN-HP-18

DHRITIMAN MUKHERJEE



DHIRTIMAN MUKHERJEE

In the Pin Valley National Park, the mountainsides are bare, except for a few mountain folds where some vegetation manages to grow in protected niches

himalayensis, Tibetan Partridge *Perdix hodgsoniae*, Ibisbill *Ibidorhyncha struthersii*, and other species of Biome 5 are found.

The Pin Valley National Park is a good area for Himalyan Griffon *Gyps himalayana* and Bearded Vulture *Gypaetus barbatus* vultures. They breed in the Park and occur in good numbers. Very large numbers of migratory birds pass through this rugged Park during migration, particularly waterfowl on their trans-Himalayan movement from Tibet and Central Asia to the plains of India during autumn.

A systematic survey of birds for the entire Spiti landscape is lacking, however Tak and Paliwal (2008) have given an account of birds of Pin Valley National Park and based on existing literature, Mahabal (2005) has provided a tabular list of birds of Lahaul and Spiti district, along with other districts of Himachal Pradesh. Combining these two sources and excluding low elevation or forest dwelling species from Mahabal's list, nearly 100 species are found in the Pin Valley NP. High altitude specialists are prominently represented in the avifaunal composition.

OTHER KEY FAUNA

Pin Valley NP has most of the mammal species typical of the cold desert of Ladakh and Tibet: Snow Leopard *Panthera uncia*,

Himalayan Ibex *Capra ibex*, Bharal *Pseudois nayaur*, Lynx *Lynx lynx*, Red Fox *Vulpes vulpes*, Tibetan Wolf *Canis lupus chanco*, Himalayan Marmot *Marmota bobak*, Woolly Hare *Lepus oiostolus*, and Indian or Royle's Pika *Ochotona roylei*. Pandey (1992) has studied Himalyana Ibex in the Park.

LAND USE

- Nature conservation and research
- Tourism and recreation
- Construction of offices

THREATS AND CONSERVATION ISSUES

- Grazing and stray dogs
- Construction work
- Tourism and recreation
- Unsustainable exploitation of resources
- Collection of medicinal herbs
- Cutting of bushes for firewood

Pin Valley NP is a high altitude Himalayan park, typical of the Tibetan cold desert. It supports a variety of rare and threatened mammals, but is largely unstudied owing to its remote location within a politically sensitive area (Singh *et al.* 1990). The cold desert of Spiti is under high pressure due to over-exploitation of medicinal plants, which are collected



BHASMANG MEHTA

Pin Valley National Park has 17 species representing Biome 5 (Eurasian High Montane). The Near Threatened Cinereous Vulture *Aegypius monachus* occurs along with the Bearded Vulture *Gypaetus barbatus* and Himalayan Griffon *Gyps himalayensis*

for the herbal pharmaceutical industry in India and for export (Singh *et al.* 2012).

The park is uninhabited, but 17 villages are located in the buffer zone. Villagers graze their livestock inside Pin Valley NP, and have herb collection rights.

There is a virtual invasion of government machinery in the villages of Pin Valley. Various departments, such as Public Welfare and Development, Forest, Revenue, Health, and Education have their offices in Pin Valley. Construction work undertaken by these departments does not appear to be directly linked with the needs of the people of Pin Valley. There is great need for a well thought out, integrated development programme for the local population, in accordance with their immediate and long term needs.

In recent years, hundreds of labourers from Bihar and Chhattisgarh have been brought in to build and repair roads. Poaching has increased. The local people, being Buddhists, do not kill animals, but the emigrant labourers do not have these sentiments.

KEY CONTRIBUTORS

IBA Team, Sanjeeva Pandey

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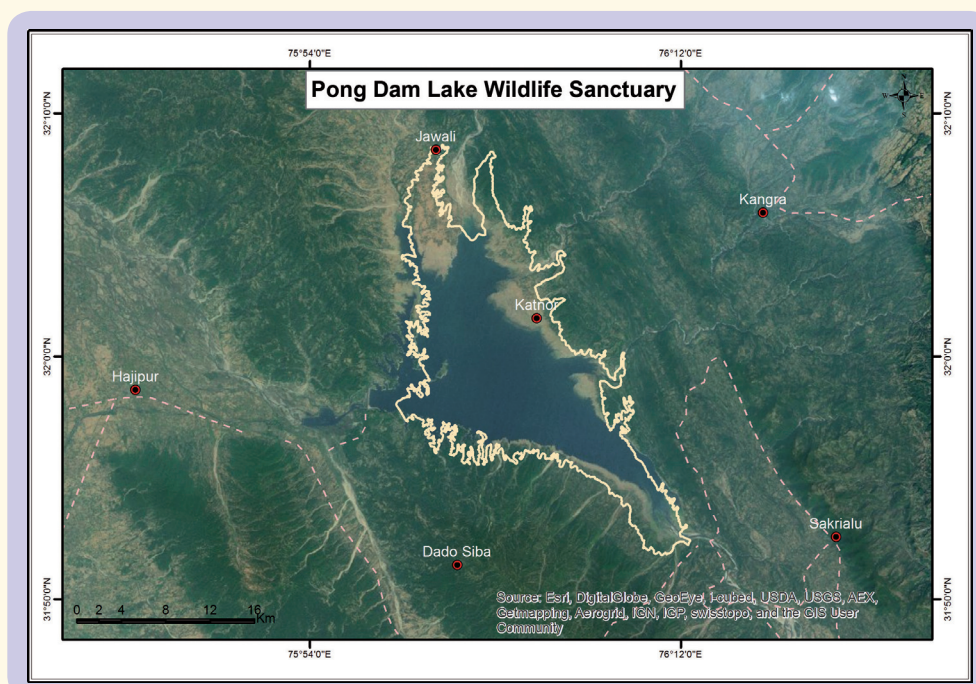
PONG DAM LAKE WILDLIFE SANCTUARY

IN-HP-19

IBA Site Code	: IN-HP-19	Area	: 20,759 ha
State	: Himachal Pradesh	Altitude	: 335–436 msl
District	: Kangra	Rainfall	: 1780 mm
Coordinates	: 32° 0' 5.199" N, 76° 2' 37.01" E	Temperature	: 6 °C to 44 °C
Ownership	: State/private	Biogeographic Zone	: Semi-Arid
		Habitats	: Aquatic

IBA CRITERIA: A1 (Threatened species), A4i (1% of biogeographic population), A4iii (Congregation: ≥ 20,000 waterbirds)

PROTECTION STATUS: Wildlife Sanctuary, established in 1982. Designated as a Ramsar Site.



GENERAL DESCRIPTION:

The Pong reservoir, also called the Maharana Pratap Sagar, was created in 1976 by the damming of the River Beas in the foothills of the Himalayas on the northern edge of the Indo-Gangetic plain. It contains several deforested islands which attract a large number of waterbirds. The northern edge is very flat, with mudflats and wet grasslands, and attracts major concentrations of birds.

Pong Dam was basically an irrigation reservoir but when a large number of birds started coming regularly to the wetland, the reservoir was declared a bird sanctuary in 1983.

There is some submerged vegetation, but the shoreline does not support much emergent vegetation due to the pronounced seasonal changes in water level. There is an extensive swamp with reedbeds and grasslands in the seepage area below the dam (Gaston 1985, 1986). The

surrounding hillsides still support some Mixed Deciduous and Chir Pine *Pinus roxburghii* forest.

Pong Dam is a designated Ramsar Site in India as it meets Ramsar Criteria 2 (wetland supports threatened ecological communities), Criteria 5 (wetland regularly supports 20,000 or more waterbirds), and Criteria 6 (wetland regularly supports 1% of the individuals in a population of one species or subspecies), and for its high ecological values (Islam and Rahmani 2008).

AVIFAUNA

Comparative studies of changes in the avifauna due to damming of large rivers are lacking in India for want of adequate data. However, Whistler's List of Birds of Kangra (Ibis 1926) mentions the occurrence and status of various species of birds in the Punjab Plain Zone (below 450 m) where, in the 1960s, the Pong Dam was constructed

across the river Beas. Waterbird surveys at the Pong Dam reservoir were initiated in 1985, and show that there has been a considerable increase in waterbird abundance as well as diversity of species. New avian habitats such as that created by the reservoir assume great importance for waterbird conservation at a time when waterfowl habitats in North India are being reduced due to extensive drainage of wetlands (Pandey 1993).

The water level in the reservoir rises to a maximum of 420 m in August-September immediately after the rains and falls to 370 m in the summer season, i.e. April-July, thereby exposing a drawdown area of about 50-220 km². This human-made water body has created the following five main types of avian habitats in the reservoir area:

- (1) Mudflats and mudspits along the receding shoreline formed from October onwards;
- (2) Open deep water;
- (3) Dry sand banks with little or no vegetation;
- (4) Waterside vegetation and swamps below the outfall from the dam;
- (5) Shallow water at the reservoir margin.

There is some submerged aquatic vegetation in the reservoir. Because of the pronounced seasonal changes in water level, the shoreline does not support extensive areas of emergent vegetation. The surrounding hill sides have some Mixed Deciduous and Chir Pine *Pinus roxburghii* forest.

The lake is an important wintering ground for waterfowl. About 10,000 ducks were recorded in December 1985, with Mallard *Anas platyrhynchos* being predominant. Besides, also observed in this site are smaller numbers of Northern Pintail *Anas acuta*, Common Teal *Anas crecca*, Common Pochard *Aythya ferina* (Gaston 1985), two Red-necked Grebes *Podiceps griseigena* (Gaston and Pandey 1987), and several Great Black-headed Gulls *Larus ichthyaeetus*, the latter being fairly uncommon away from the coast in India.

Gaston (1985) observed a total of 103 species in the area, but Pandey (1989) recorded more than 220 species. Balachandran and Akhtar (2004) recorded 161 species of birds and over 1,00,000 waterbirds during a bird banding programme conducted here from January 18 to February 9, 2004. They also reported the occurrence of over 10,000 Great Cormorants *Phalacrocorax carbo* and 600 River Terns *Sterna aurantia*. The report mentions of more than 10,000 birds of each of these species: Bar-headed Goose, Northern Pintail *Anas acuta*, Common Coot *Fulica atra*, Great Cormorant and Common Teal *Anas crecca*. In a later report Balachandran (2005) reported 224 species in the dam area. Dhadwal (2011) reported 415 species of birds from Pong Dam, out of which 97 species breed in the lake during summer. Recently, Jindal *et al.* (2013) recorded 304 species of birds from this IBA. Soon after the construction of the dam and resultant development of water reservoir, the Pong Dam has become an important wintering ground for waterfowl. Waders such as Common

Greenshank *Tringa nebularia*, Green Sandpiper *T. ochropus*, Common Sandpiper *T. hypoleucos* and Temmink's Stint *Calidris temminkii* occur here in considerable numbers. A great variety of raptors have also been recorded, including Osprey *Pandion haliaetus*, Pallas's Fish-Eagle *Haliaeetus leucorhynchus*, Marsh Harrier *Circus aeruginosus* and Tawny Eagle *Aquila rapax*.

By early 2000, the concentration of wintering waterfowl had sharply increased. For example, 60,000 were estimated in 2002 and over 75,000 in 2003. Found in large numbers were Northern Pintail (25,000), Bar-headed Goose *Anser indicus* (10,000), Common Teal *Anas crecca* (>6000), Eurasian Wigeon *A. penelope* (>6000), Common Pochard *Aythya ferina* (>5000) and Great Cormorant *Phalacrocorax carbo* (>4500) (J.W. den Besten *pers. comm.* 2003). Most of these numbers are much above the 1% population threshold recently described by Wetlands International (2012).

Water bird estimates in Pong dam from 1999-2008 (Dhadwal 2008)

Year	Total number of water birds estimated
1999-00	70,555
2000-01	81,848
2001-02	114,082
2002-03	115,201
2003-04	136,000
2004-05	142,292
2005-06	130,490
2006-07	111,721
2007-08	105,000

During the annual waterbird census in 2010, a total of 1,44,000 waterbirds were estimated. In 2012, the estimate for Bar-headed Geese was 40,000 and the estimated number for pochards was 30,000 (Sanjeeva Pandey *pers. comm.* 2013). During BNHS surveys, the number of Bar-headed Geese was estimated at 43,000 in 2014.

The lake sustains some breeding birds. There are up to several dozen pairs of Black-crowned Night-heron *Nycticorax nycticorax*, Gull-billed Tern *Gelochelidon nilotica*, Little Tern *Sterna albifrons*, Yellow-wattled Lapwing *Vanellus malabaricus* and large numbers of River Tern *Sterna aurantia*, and Red-wattled Lapwing *Vanellus indicus*. A few pairs of Sarus Crane *Grus antigone* breed in the vicinity. The outflow area of Shah Nehar barrage sustains breeding populations of Common Moorhen *Gallinula chloropus*, Purple Swampphen *Porphyrio porphyrio*, Purple Heron *Ardea purpurea*, Cinnamon Bittern *Ixobrychus cinnamomeus*, Yellow Bittern *Ixobrychus sinensis* and White-tailed Stonechat *Saxicola leucura*. Dhadwal (2013) reported a Whooper Swan *Cygnus cygnus* from this site. The last known record of this species was from 1909.

Merwym and Besten (2013) found 383 nests of River Tern *Sterna aurantia*, 95 nests of Little Tern *Sterna albifrons* four nests of Indian Skimmer *Rynchops albicollis* and 87 nests of Small Pratincole *Glareola lactea*. Also breeding of Great Thick-knee *Esacus recurvirostris* was confirmed from Nagrota Surian.

Abhinav and Dhadwal (2014) observed and photographed an Eurasian Golden Plover *Pluvialis apricaria* at Nagrota Surian in April and May 2013. It is a vagrant to the Indian subcontinent and this is the first record of this species from Himachal Pradesh.

Praveen *et al.* (2014) mention two Indian rarities from Pong Dam: the Lesser White-fronted Goose *Anser erythropus* which was recorded twice from Pong Dam, once in 2003 and again in 2014 and the Red-necked Grebe *Podiceps grisegena*, where just one bird in non-breeding plumage was photographed from this IBA.

BNHS has been conducting regular bird migration studies at Pong Dam area in the last few years using radio telemetry as well as various marking techniques to understand the migratory patterns of birds, especially ducks and geese (S. Balachandran and Gulati 2013).

CRITICALLY ENDANGERED

White-rumped Vulture	<i>Gyps bengalensis</i>
Slender-billed Vulture	<i>Gyps tenuirostris</i>
Red-headed Vulture	<i>Aegypius calvus</i>

ENDANGERED

Egyptian Vulture	<i>Neophron percnopterus</i>
Black-bellied Tern	<i>Sterna acuticauda</i>

VULNERABLE

Asian Woollyneck	<i>Ciconia episcopus</i>
Lesser White-fronted Goose	<i>Anser erythropus</i>
Greater Spotted Eagle	<i>Clanga clanga</i>
Eastern Imperial Eagle	<i>Aquila heliaca</i>
Pallas's Fish-eagle	<i>Haliaeetus leucoryphus</i>
Sarus Crane	<i>Grus antigone</i>
Indian Skimmer	<i>Rynchops albicollis</i>

NEAR THREATENED

Oriental Darter	<i>Anhinga melanogaster</i>
Painted Stork	<i>Mycteria leucocephala</i>
Black-headed Ibis	<i>Threskiornis melanocephalus</i>
Ferruginous Duck	<i>Aythya nyroca</i>
Himalayan Griffon	<i>Gyps himalayensis</i>
Cinereous Vulture	<i>Aegypius monachus</i>
Great Thick-knee	<i>Esacus recurvirostris</i>
River Lapwing	<i>Vanellus duvaucelii</i>
Eurasian Curlew	<i>Numenius arquata</i>
Black-tailed Godwit	<i>Limosa limosa</i>
River Tern	<i>Sterna aurantia</i>
Alexandrine Parakeet	<i>Psittacula eupatria</i>

OTHER KEY FAUNA

In recent years, Golden Jackal *Canis aureus*, Himalayan Yellow-throated Marten *Martes flavigula*, Small Indian Civet *Viverricula indica*, Wild Boar *Sus scrofa* and Nilgai *Boselaphus tragocamelus* have been reported, the last two species in the outflow area (J.W. den Besten *pers. comm.* 2003). Reptiles include the Common Cobra *Naja naja*, Indian Rock Python *Python molurus* and Common Monitor *Varanus bengalensis*. Fish species found are Mahseer *Tor tor*, Mallip *Wallago attu* and Sole *Ophiocaphtalus marulius*.

Balachandran (2005) reported the occurrence of 8 species of grasses, 23 species of shrubs and 54 species of trees here. They found 25 species of fishes. Howel (1916) had reported the occurrence of Mountain Barbel *Orenius sinnatus*, Brown Trout *Salmo trutta fario* and a species of Catfish *Glyptosternum striatum* locally known as Ganguli or Mochi. Later Singh (1985) reported Golden Mahaseer *Tor putitora* (an Endangered species now), Common Snow Trout *Schizothorax richardsonii* and Freshwater Shark *Wallago attu* (a Near Threatened species now), from the Beas River. Dhadwal (2011) recorded 18 species of snakes and 21 species of mammals.

Randhawa, S. (undated) listed 85 species of butterflies and five species of turtles namely Spotted Pond Turtle *Geoclemys hamiltonii*, Indian Tent Turtle *Pangshura tentoria*, Indian Flap-shelled Turtle *Lissemys punctatata*, Indian Black Turtle *Melanochelys trijuga* and Gangetic Soft-shell Turtle *Nilsonia gangetica*.

LAND USE

- Agriculture
- Nature conservation and research
- Tourism and recreation
- Water management

THREATS AND CONSERVATION ISSUES

- Fisheries
- Grazing
- Incidental poaching, possible poisoning
- Tourism
- Water pollution by pesticides and solid waste in source rivers.

Apart from its importance as a source of water for irrigation and domestic use, Pong Dam attracts a large number of migratory waterfowl which, to some extent, compensates for drainage of wetland habitats elsewhere in northern India over the last 50 years (Gaston 1986; Gaston and Pandey 1987).

The Himachal Pradesh Government wants to develop the reservoir as a new tourist paradise, with water sports as the main attraction for which a Regional Water Sports Centre was constructed here. The State has now proposed to use this centre for water sports on a commercial basis. It

has also been proposed to undertake the construction of a platform for tents with toilets at *Ransar ki Garhi* island in the lake. The Bhakra Beas Management Board, which looks after the reservoir, has been asked to grant permission for these proposals.

A management plan for the period 1983/1984-1988/1989 was prepared in November 1982, and approved in December 1984. Despite the vast size of the lake, the protection of the Sanctuary would not be difficult if adequate manpower is made available. A number of recommendations have been made to enhance the attractiveness of the area for waterbirds, facilitate access and provide interpretive services for the public (Gaston 1985). The buffer zone is not yet under the management of the Sanctuary authorities due to the large number of residents (Singh *et al.* 1990).

The Sanctuary in the seepage zone called Sansarpur Terrace Sanctuary is accessible to large numbers of cattle and grass cutters. The cattle in particular do a lot of damage to the reedbeds.

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J.W. den Besten, Sanjeeva Pandey, Devinder Dadwal, Murari Thakur.

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RUPI BHABHA WILDLIFE SANCTUARY

IN-HP-20

IBA Site Code : IN-HP-20

State : Himachal Pradesh

District : Kinnaur

Coordinates : 31° 42' 44" N, 78° 03' 35" E

Ownership : State

Area : 26,900 ha

Altitude : 909–5,605 msl

Rainfall : 450 mm

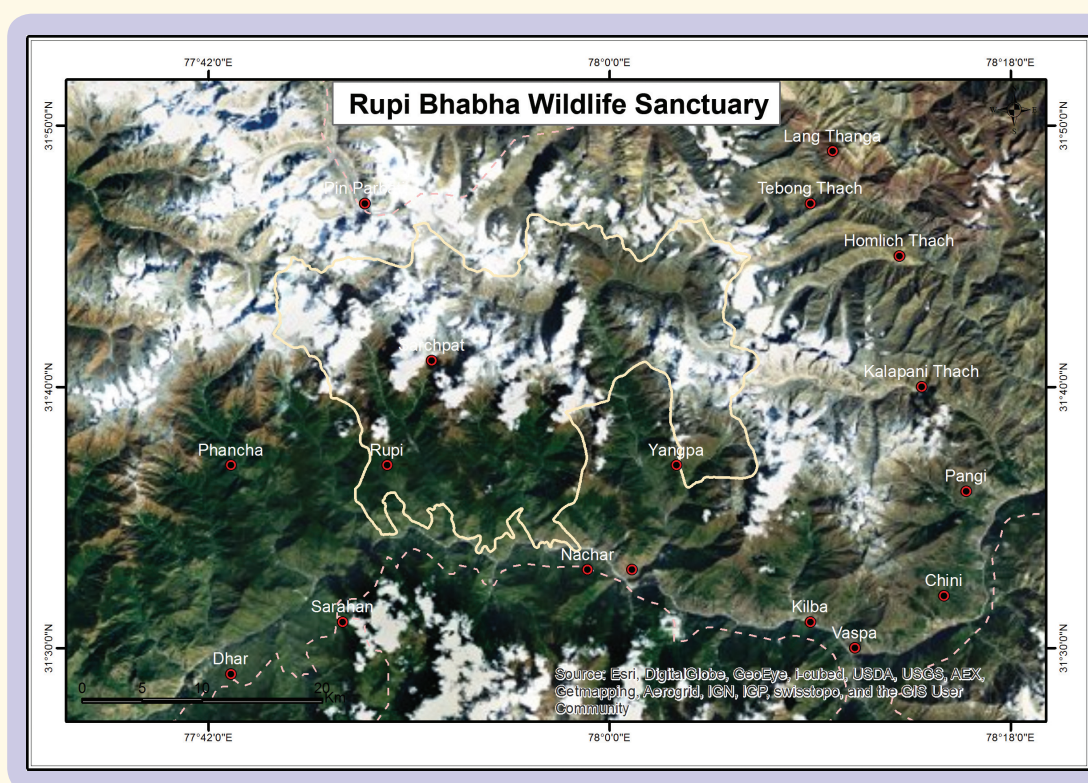
Temperature : -10 °C to 20 °C

Biogeographic Zone : Himalaya

Habitats : Alpine Moist Pasture, Sub-alpine Forest, Sub-tropical Pine Forest, Sub-tropical Broadleaf Hill Forest, Montane Wet Temperate Forest, Riverine Vegetation

IBA CRITERIA : A1 (Threatened species), A2 (Endemic Bird Area 128: Western Himalaya), A3 (Biome 7: Sino-Himalayan Temperate Forest, Biome: 8 Sino-Himalayan Sub-tropical Forest)

PROTECTION STATUS : Wildlife Sanctuary, established in March, 1982.



GENERAL DESCRIPTION

Rupi Bhabha Wildlife Sanctuary has a wide variation in altitudes, and supports a large diversity of habitats and wildlife. It lies in the catchment area of the Sutlej river and is drained by many small streams. The northern part is covered with glaciers. The Great Himalayan National Park and Pin Valley National Park are located on its western and northern boundaries, respectively. Thus, it forms a large protected area complex, extremely important for alpine, sub-alpine and broadleaf forest birds. The nearest town is Rampur-Bushahr, c. 40 km away. Despite its large size and remoteness from human habitation, this sanctuary faces many biotic pressures, such as hydroelectric power generation schemes.

Based on the classification of Champion & Seth (1968), there are five forest types in this IBA: Alpine Pasture, Dry Temperate Coniferous Forests, Dry Broadleaf and Coniferous Forests, Kharsu Oak Forest, and Lower Western Himalayan Temperate Forest. The Forest Department has undertaken many plantation schemes for commercial timber and for the fuel wood requirement of local people. Besides indigenous species, they have also planted exotics such as Poplar *Salix* and Robinia *Robinia pseudacacia*.

AVIFAUNA

No work has been done on the avifauna of this important protected area of the Western Himalaya. Singh *et al.* (1990)



DHRTIMAN MUKHERJEE

Due to its wide altitudinal range, from 900 m to 5,600 m, Rupi Bhabha WLS has representative vegetation from Sub-tropical Broadleaf Hill Forest to Alpine Pastures

VULNERABLE

Western Tragopan	<i>Tragopan melanocephalus</i>
Cheer Pheasant	<i>Catreus wallichii</i>

ENDEMIC BIRD AREA 128: WESTERN HIMALAYA

White-cheeked Tit	<i>Aegithalos leucogenys</i>
White-throated Tit	<i>Aegithalos niveogularis</i>
Orange Bullfinch	<i>Pyrrhula aurantiaca</i>
Western Tragopan	<i>Tragopan melanocephalus</i>
Cheer Pheasant	<i>Catreus wallichii</i>

BIOME 7: SINO-HIMALAYAN TEMPERATE FOREST

Commo Hill -partridge	<i>Arborophila torqueola</i>
Koklass Pheasant	<i>Pucrasia macrolopha</i>
Himalayan Monal	<i>Lophophorus impejanus</i>
Speckled Woodpigeon	<i>Columba hodgsonii</i>
Himalayan Woodpecker	<i>Dendrocopos himalayensis</i>
Striated Laughingthrush	<i>Grammatoptila striata</i>
Variegated Laughingthrush	<i>Garrulax variegatus</i>
Scaly-breasted Wren-babbler	<i>Pnoepyga albiventer</i>
Yellow-billed Blue Magpie	<i>Urocissa flavirostris</i>

BIOME 8: SINO-HIMALAYAN SUBTROPICAL FOREST

Himalayan Bulbul	<i>Pycnonotus leucogenys</i>
Himalayan Black Bulbul	<i>Hypsipetes leucocephalus</i>
Rusty-cheeked Scimitar-babbler	<i>Pomatorhinus erythrogenys</i>
Grey Treepie	<i>Dendrocitta formosae</i>

provided a preliminary list of 27 bird species recorded in the sanctuary. This IBA is an important habitat for the globally Threatened Western Tragopan *Tragopan melanocephalus* and Cheer Pheasant *Catreus wallichii*. Besides these two pheasants, which are restricted to the Western Himalaya, three more restricted-range species have been identified. However, population density and abundance of these species are not known. Based on the preliminary listing, nine species of Biome 7 (Sino-Himalayan Temperate Forest) and four of Biome 8 (Sino-Himalayan Subtropical Forest) have been identified. This list should be considered as only indicative, till further studies are conducted. At present, we consider the site as Data Deficient. Unfortunately, no study on birds has been conducted in this sanctuary.

OTHER KEY FAUNA

This vast, sprawling sanctuary is home to almost all the mammal species of the alpine, sub-alpine, and temperate forests of the Western Himalaya. Snow Leopard *Panthera uncia* haunts the cold desert and alpine tracts in search of Greater Blue Sheep *Pseudois nayaur*, Alpine Musk Deer *Moschus chrysogaster*, Himalayan Tahr *Hemitragus jemlahicus*, and Asiatic Ibex *Capra sibirica*. At lower elevations, it is replaced by the common Leopard *Panthera pardus*, which hunts Barking Deer *Muntiacus muntjak*, Himalayan Brown Goral



White-throated Tit *Aegithalos niveogularis* is an endemic species of the Western Himalaya and it is common in Broadleaf Hill Forest

Naemorhedus goral and Himalayan Serow *Capricornis thar*. Brown Bear *Ursus arctos* and Asiatic Black Bear *U. thibetanus* are found in the altitudinal range of 1,600 to 4,000 m. There are also many smaller mammals recorded.

Some of the butterfly species here include Yellow Swallowtail *Papilio machaon*, Common Blue Apollo *Parnassius hardwickei*, Hill Jezebel *Delias belladonna*, Plum Judy *Abisara echerius*, Yellow Coster *Pareba vesta*, Blue Admiral *Vanessa canace*, and Large Branded Swift *Pelopidas sinensis* (Uniyal 2007).

LAND USE

- Nature conservation and research
- Tourism and recreation
- Urban transport
- Water management

THREATS AND CONSERVATION ISSUES

- Construction and impact of dams
- Burning of vegetation
- Grazing
- Firewood collection
- Agriculture

Rupi Bhaba Sanctuary faces a major threat from the Sanjay Vidyut Project, a hydroelectric power generation

scheme. Apart from the construction of the generating plant and dam, ancillary activities such as building, industry, transmission lines, and housing will affect the area. Another hydel project, the Nathpa Jhakro project, will submerge part of the sanctuary. Forest fires, hailstorms, and drought already affect the area. Both local residents and nomadic Gaddi and Gujjar communities have grazing rights. Sheep from the breeding centre at Jeori come to graze. There are 15 villages inside the sanctuary, so anthropogenic pressure is high.

KEY CONTRIBUTOR

Sanjeeva Pandey.

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RAKCHHAM CHITKUL (SANGLA) WILDLIFE SANCTUARY

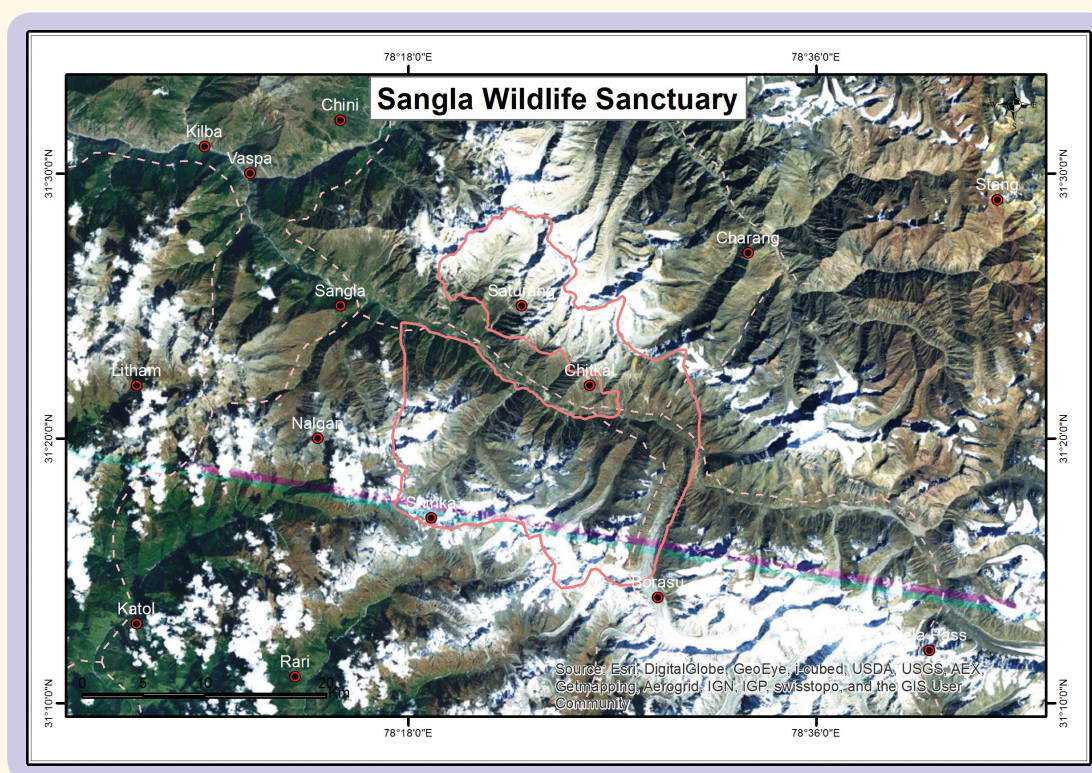
IN-HP-21

IBA Site Code	: IN-HP-21
State	: Himachal Pradesh
District	: Kinnaur
Coordinates	: 31° 18' 55.163" N, 78° 20' 42.411" E
Ownership	: State
Area	: 30,400 ha

Altitude	: 3,200–5,486 msl
Rainfall	: 1,130 mm
Temperature	: -10 °C to 15 °C
Biogeographic Zone	: Himalaya
Habitats	: Himalayan Moist Temperate Forest, Alpine Moist Pastures

IBA CRITERIA : A1 (Threatened species), A2 (Endemic Bird Area 128: Western Himalaya)

PROTECTION STATUS : Wildlife Sanctuary, established in May, 1989



GENERAL DESCRIPTION

Located in the catchment area of the Baspa river, Sangla Wildlife Sanctuary is situated in the arid zone of the middle Himalaya. The flora and fauna are, therefore, quite unique. Govind Wildlife Sanctuary of Uttarakhand is adjacent to its southern boundary, and a little beyond the eastern boundary of the Sangla Sanctuary lies the Tibetan plateau (Singh *et al.* 1990).

The high altitude areas (above 2,000 m) of this sanctuary are less accessible and therefore, less disturbed. Dense forests of Deodar *Cedrus deodara* and Chilgoza Pine *Pinus gerardiana*, and broadleaf species are found from 2,000 m upwards. From 2,800 m upwards, Fir-Spruce Mixed Forest with bamboo-dominated undergrowth prevails.

This sanctuary is known for its vast alpine pastures. The forest-clad hill slopes are very steep, punctuated with rocky outcrops bearing no vegetation at all. Such habitats alternate with a vast number of hill streams (nullahs), which descend to meet the main valleys of Shong, Barua, Rukti, and Batseri Nullahs. The precipitous hill slopes in these remote valleys make them difficult for humans to approach, but are suitable for wildlife.

Based on the classification of Champion & Seth (1968), five major forest types are seen in this sanctuary: i. Dry Alpine Scrub, ii. Dry Temperate Coniferous Forest, iii. Dry Broadleaf and Coniferous Forest, iv. Upper West Himalayan Temperate Forests, and v. Lower Western Himalayan Temperate Forests.. The higher reaches are

DHRITIMAN MUKHERJEE



Sangla Wildlife Sanctuary, also known as Raksham Chitkul, forms the catchment area of Baspa river. This large sanctuary adjoins Govind Wildlife Sanctuary, and together they form a large protected landscape

snowbound most of the year, and four glaciers are located within the sanctuary. The alpine area of Sangla WLS has a rich growth of herbs. The local villagers earn part of their livelihood by collecting and selling them. The most important herb, collected in quantities, is Dhup *Jurinea macrocephala*. Other herbs are Karu *Gentiana kurroo*, Patish *Aconitum heterophyllum*, Kuth Banafsha *Viola canescens*, and *Saussurea lappa*. Several herbs found in the alpine pastures of this sanctuary are of great importance in Ayurvedic medicine.

Chawla *et al.* (2012) conducted a detailed survey of vascular plants in Kinnaur district of Himachal Pradesh. Some of the endemic plants species include *Strobilanthes wallichii*, *Bupleurum falcatum*, *Heracleum pinnatum*, *Berberis chitria*, *Corylus jacquemontii*, *Cyananthus lobatus*, *Stellaria media*, *Carpesium nepalense*, and *Lactuca dolichophylla*.

AVIFAUNA

Highly endangered species of pheasants, including the Western Tragopan *Tragopan melanocephalus* are found in this sanctuary at the easternmost limits of their range. Other pheasants are Himalayan Monal *Lophophorus impejanus*, Koklass *Pucrasia macrolopha*, and Kaleej Pheasant *Lophura leucomelana*. Sangla also has many species representing Biome 5 (Eurasian High Montane),

Biome 7 (Sino-Himalayan Temperate Forest), and Biome 8 (Sino-Himalayan Subtropical Forest).

A recently published paper by Negiet *al.*(2015) has reported occurrence of 73 species of birds in this IBA. They reported raptors like Bearded Vulture *Gypaetus barbatus*, Himalayan Griffon *Gyps himalayensis*, Golden Eagle *Aquila chrysaetos* to be common here. They also reported occurrence of following species: Long-legged Buzzard *Buteo rufigularis*, Rufous-breasted Accentor *Prunella trochiloptera*, Rufous-breasted Accentor *Prunella trochiloptera*, Tibetan Snowfinch *Monticola tibetana*, Streaked Laughingthrush *Garrulax lineatus*, Variegated Laughingthrush *Garrulax variegatus*, Brown-flanked Bush-Warbler *Cettia fortipes*, White-collared Blackbird *Turdus albocinctus*, Orange-flanked Bush-Robin *Tarsiger cyanurus*, Blue-capped Redstart *Phoenicurus caeruleocephalus*, Blue-fronted Redstart *Phoenicurus frontalis*, White-capped Redstart *Chaimarrornis leucocephalus* and White-bellied Redstart *Hodgsonius phaenicuroides*.

VULNERABLE	
Western Tragopan	<i>Tragopan melanocephalus</i>
NEAR THREATENED	
Himalayan Griffon	<i>Gyps himalayensis</i>
ENDEMIC BIRD AREA 128: WESTERN HIMALAYA	
Western Tragopan	<i>Tragopan melanocephalus</i>

From the preliminary list, we find that four out of 48 species of Biome 5 listed by BirdLife International (undated) are found here. These are Himalayan Griffon *Gyps himalayensis*, Himalayan Snowcock *Tetraogallus himalayensis*, Rosy Pipit *Anthus roseatus*, and Plain Mountain-finch *Leucosticte nemoricola*. This is just an indicative list. As some parts of this IBA lie in Biome 7 (Sino-Himalayan Temperate Forest), we see birds of this biome also, such as Koklass Pheasant, Himalayan Monal, Speckled Woodpigeon *Columba hodgsonii*, Himalayan Woodpecker *Dendrocopos himalayensis*, and Yellow-billed Blue Magpie *Urocissa flavirostris*. As the forest is intact in many places, there are chances that many more birds of Biome 7 would be present.

The site lies in the Western Himalaya Endemic Bird Area (EBA 128) where Stattersfield *et al.* (1998) identified 11 restricted-range species. From these 11 birds, only Cheer Pheasant has been confirmed in Sangla, but more are likely to be present once we have more information on the birdlife of this IBA.

OTHER KEY FAUNA

The large mammals found in this sanctuary are Snow Leopard *Panthera uncia*, Alpine Musk Deer *Moschus chrysogaster*, Greater Blue Sheep *Pseudois nayaur*, Himalayan Tahr *Hemitragus jemlahicus*, Asiatic Black Bear *Ursus thibetanus* at high altitudes, bordering alpine and subalpine regions. At lower elevations, Himalayan Brown Goral *Naemorhedus goral*, Himalayan Serow *Capricornis thar*, Leopard *Panthera pardus*, and Nepal Gray Langur *Semnopithecus schistaceus* are found. No information is available on smaller mammals, reptiles, and other fauna.

Uniyal (2007) describes several butterfly species from this site, such as Common Windmill *Atrophaneura polyeuctes*, Krishna Peacock *Priniceps krishna*, Pioneer *Anapheis aurota aurata*, Lesser Brimstone *Gonepteryx aspasia*, Tawny Coster *Acraea violae*, Common Punch *Dodona durga*, and Water Snow Flat *Tagiades litigiosa*.

LAND USE

- Agriculture

THREATS AND CONSERVATION ISSUES

- Hydroelectric project
- Hunting

The villagers of Sangla WLS are by and large agrarian. In recent years, Sangla WLS which is in the extreme western part of Kinnaur district, has become open to outside influences, and has seen a great deal of commercialization, especially in the main Baspa Valley. Huge hydroelectric projects, Baspa I and Baspa II, have changed the face of

the area forever. The construction of the Vidyut Pariyojana has brought in roads, equipment of building construction, engineers, and infrastructure. In addition to being employed in the hydroelectric projects, the villagers have started growing apple and other fruits as commercial crops. Agriculture, however, continues to be the major occupation of the local populace.

The living conditions of people in upper reaches of Baspa Valley, including the villages of Chitkul, Mastrang, and others, are in direct contrast to those in the main Baspa Valley. People in these remote villages are poor, mostly illiterate, and cling to age-old customs and traditions. In the past, after snowfall, hunting of wild animals was their major occupation. The Alpine Musk Deer used to be ruthlessly hunted for its musk pod, which fetched a good price in the market towns of Rampur, Shimla, and Amritsar. Even today, the local people say that the Musk Deer of Chitkul forests produces the best quality and quantity of musk in the whole Himalayan region. Most of the people are non-vegetarian. Barking Deer or Indian Muntjac, which once had a good population, has now become almost extinct because of persecution for meat. Himalayan Monal has been traditionally hunted for its crest feathers, which the villagers wear on their caps, as a status symbol. Other pheasants are also killed for meat.

KEY CONTRIBUTOR

Sanjeeva Pandey

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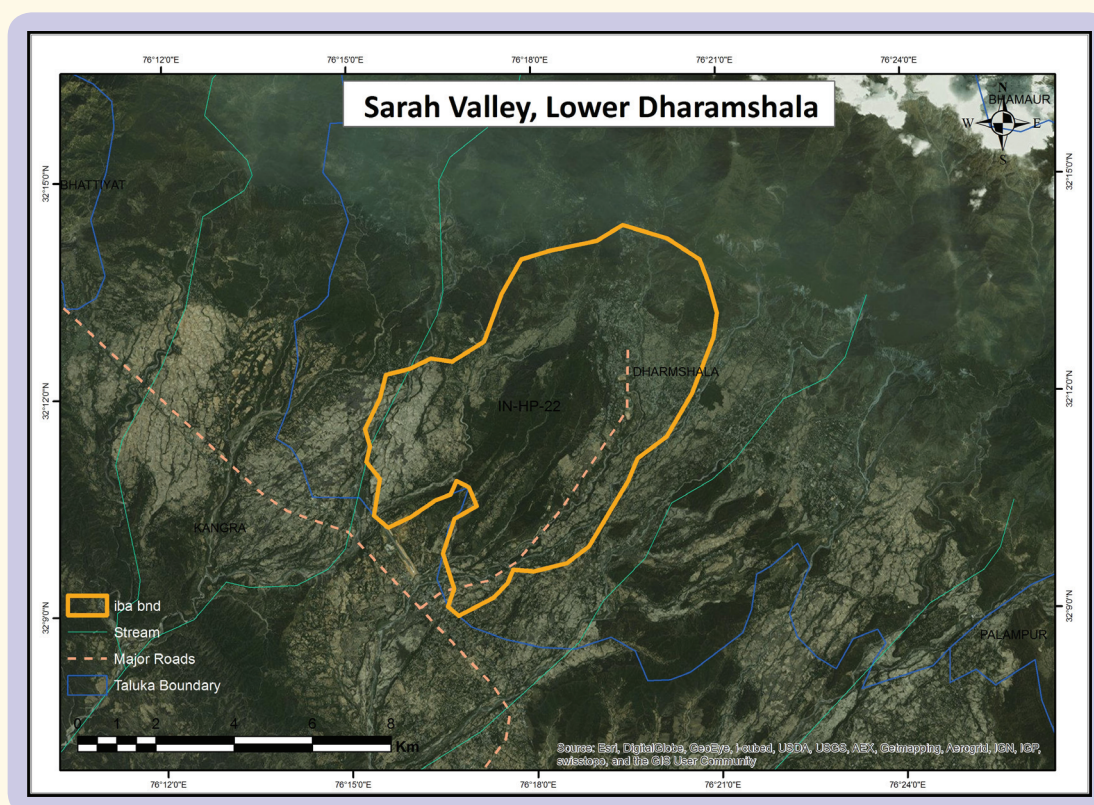
SARAH VALLEY, LOWER DHARAMSHALA

IN-HP-22

IBA Site Code	: IN-HP-22	Altitude	: 700–1,400 msl
State	: Himachal Pradesh	Rainfall	: 2,000–3,000 mm
District	: Kangra	Temperature	: 0 °C to 40 °C
Coordinates	: 32° 11' 56" N, 76° 20' 36" E	Biogeographic Zone	: Himalaya
Ownership	: Private	Habitats	: Himalayan Moist Temperate Forest, Himalayan Secondary Scrub
Area	: Not available		

IBA CRITERIA : A1 (Threatened species) A3 (Biome 8: Sino-Himalayan Subtropical Forest)

PROTECTION STATUS : Not officially protected.



GENERAL DESCRIPTION

The valley from north to west of Sarah, below Dharamshala town, is a rare example of a valley in the foothills of the Dhauladhar range that is still largely covered with good forest, despite the fact that human population pressure is high in this zone, which has large well-watered areas ideal for agriculture. There are only a few valleys that connect the dry deciduous forests of the Shivalik Hills to the temperate forests on the higher Dhauladhar range. The forest in the valley around Sarah is more lush than most of the forests found in the Shivaliks. It is a fine example of Broadleaf Forest in a zone where most forests have given way to intensive, irrigated agriculture or to plantations of Pine.

Sub-tropical mixed forest with good undergrowth, and deciduous and broadleaf species interspersed with Chir Pine cover this area. The higher reaches of the valley are partly covered by tea gardens.

AVIFAUNA

Except for three species of vultures, Slender-billed *Gyps tenuirostris*, White-rumped *Gyps bengalensis*, and Himalayan Griffon *Gyps himalayensis*, which are widespread, there are no globally Threatened or restricted-range species found in Sarah Valley. However, the forest in this valley sustains healthy populations of birds that have disappeared from many other valleys in the foothills of Dhauladhar (J.W. den Besten, *pers. comm.* 2003). Many

CRITICALLY ENDANGERED

White-rumped Vulture	<i>Gyps bengalensis</i>
Slender-billed Vulture	<i>Gyps tenuirostris</i>

NEAR THREATENED

Himalayan Griffon	<i>Gyps himalayensis</i>
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BIOME 8 (SINO-HIMALAYAN SUB-TROPICAL FOREST)

Slaty-headed Parakeet	<i>Psittacula himalayana</i>
Black-winged Cuckooshrike	<i>Coracina melaschistos</i>
Rosy Minivet	<i>Pericrocotus roseus</i>
Himalayan Bulbul	<i>Pycnonotus leucogenys</i>
Himalayan Black Bulbul	<i>Hypsipetes leucocephalus</i>
Blue-capped Rock-thrush	<i>Monticola cinclorhynchus</i>
Tickell's Thrush	<i>Turdus unicolor</i>
Grey-winged Blackbird	<i>Turdus boulboul</i>
Rusty-cheeked Scimitar-babbler	<i>Pomatorhinus erythrogenys</i>
Black-chinned Babbler	<i>Stachyris pyrrhops</i>
Grey-headed Warbler	<i>Phylloscopus xanthoschistos</i>
Black-throated Tit	<i>Aegithalos concinnus</i>
Black-headed Jay	<i>Garrulus lanceolatus</i>
Grey Treepie	<i>Dendrocitta formosae</i>

species here are typical of the Shivaliks, and even more than the Shivalik forests, they include high densities of wintering species from Biome 5 and Biome 7. Breeding birds of Biome 8 and Biome 11 are also found here.

This is one of the few sites that were selected purely on the basis of biome-restricted assemblages (A3 criteria). Perhaps there are more such sites in Himachal Pradesh but data are lacking.

Sarah Valley lies in Biome 8 (Sino-Himalayan Subtropical Forest). BirdLife International (undated) has listed 95 species, out of which 14 species have been seen here, though more are likely to be found. As Biome 7 (Sino-Himalayan Temperate Forest) overlaps with Biome 8, many species show altitudinal movement. 33 species characteristic of Biome 7 are seen in Sarah Valley.

During winter, four species of Biome 5 (Eurasian High Montane – Alpine and Tibetan) are seen here: Himalayan Griffon *Gyps himalayensis*, Wallcreeper *Tichodroma muraria*, Sulphur-bellied Warbler *Phylloscopus griseolus*, and Rosy Pipit *Anthus roseatus*. Except for the Himalayan Griffon, which is largely confined to the Himalaya (with altitudinal movement), the three remaining species winter in the foothills and north Indian plains, so their presence in Sarah Valley is not surprising. However, what is most interesting about this IBA is the presence of at least 15 species of Biome 11 (Indo-Malayan Tropical Dry Zone). This

is because the relatively wet Sarah Valley is connected with the dry deciduous forest of the Shivaliks, and many birds of the Shivaliks and plains move in during summer to breed in this valley. Thus, we have a site where resident birds from the high Himalaya and also from the dry Indian plains mix with birds of the middle and lower Himalaya. Many species are temporally and spatially separated, but all are found in this IBA at one time or other of the year.

OTHER KEY FAUNA

Not much is known about the mammalian and reptilian fauna of this site. Leopard *Panthera pardus* is common, as in most of the mid- to low-level forests of Himachal Pradesh. Barking Deer *Muntiacus muntjak* is its natural prey, but cattle are commonly killed, much to the resentment of villagers. Common Palm Civet *Paradoxurus hermaphroditus*, Yellow-throated Marten *Martes flavigula*, and Indian Crested Porcupine *Hystrix indica* are the smaller predators. Bat species reported from here include Fulvous Fruit Bat *Rousettus leschenaulti*, Indian Flying Fox *Pteropus giganteus*, Greater False Vampire *Megaderma lyra*, Hodgson's Bat *Myotis formosus*, and Nepalese Whiskered Bat *Myotis muricola* (Saikia *et al.* 2011). Common Monitor *Varanus bengalensis* is said to occur in this IBA.

LAND USE

- Collection of firewood and fodder
- Tea production
- Agriculture in very small plots
- Grazing

THREATS AND CONSERVATION ISSUES

- Forest fires
- Illegal felling

Though the area is under no particular protection, the forest is well maintained and developed by the local citizens who depend on it for their livelihood.

KEY CONTRIBUTOR

J.W. den Besten.

KEY REFERENCES

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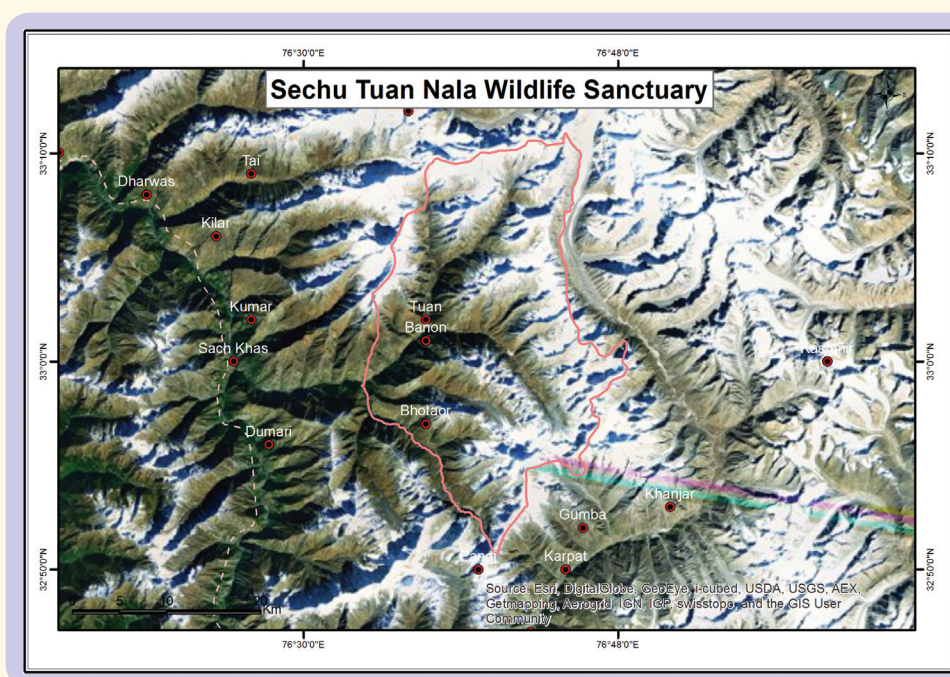
SECHU TUAN NALA WILDLIFE SANCTUARY

IN-HP-23

IBA Site Code	: IN-HP-23	Altitude	: 2,550–6,072 msl
State	: Himachal Pradesh	Rainfall	: 500 mm
District	: Chamba	Temperature	: -20 °C to 27 °C
Coordinates	: 32° 57' 28.951" N, 76° 41' 9.812" E	Biogeographic Zone	: Himalaya
Ownership	: State	Habitats	: Moist Himalayan Temperate Forest, Moist Alpine Scrub, and Dry Alpine Scrub
Area	: 39,029 ha		

IBA CRITERIA: A1 (Threatened species), A2 (Endemic Bird Area 128: Western Himalaya), A3 (Biome 5: Eurasian High Montane, Biome 7: Sino-Himalayan Temperate Forest). Data Deficient.

PROTECTION STATUS: Wildlife Sanctuary, established in 1962.



GENERAL DESCRIPTION

This sanctuary lies in Chamba district, 113 km from Chamba town. It can be accessed from Kilar, on foot to Sechu (15 km), alternatively via Kishtwar in Jammu & Kashmir to Sarsu, and onwards on foot to Sechu. The sanctuary includes several glaciers. Hindu and Buddhist temples are also located at Bhat, Tuan, Hilu, Chroti, and Kalichor. There are 11 villages inside the sanctuary, with a total population of more than a thousand people. Fourteen villages with a population of about 3,000 are located in the surrounding area. More than 3000 heads of livestock graze inside the sanctuary (Singh *et al.* 1990).

According to the classification of Champion & Seth (1968), three forest types are found in this IBA: Dry Alpine Scrub, Moist Alpine Scrub, and Lower Western

Himalayan Temperate Forest. Species of medicinal value include *Aconitum heterophyllum*, *Jurinea macrocephala*, and *Ephedra gerardiana* (Singh *et al.* 1990). Plantations of fuel wood and other commercial forest products have been established by the Forest Department. Species planted include Cedar *Cedrus deodara*, Poplar *Salix* sp., Kail *Pinus wallichiana*, Willow *Alnus* sp., Robinia *Robinia* sp., and Walnut *Juglans regia* (Singh *et al.* 1990).

During the exercise of rationalisation of the PAs, only human habitation part of the sanctuary had been taken out.

AVIFAUNA

There is a paucity of published records on the birds of this sanctuary. Singh *et al.* (1990) provide a preliminary list of

16 bird species recorded in the sanctuary, but considering the size and altitude gradient, there could be ten times more. Five species from Biome 5 (Eurasian High Montane – Alpine and Tibetan) and four of Biome 7 (Sino-Himalayan Temperate Forest) have been identified in the list. The globally Threatened Western Tragopan *Tragopan melanocephalus* is present in this IBA, but its density and distribution are not known. Himalayan Snowcock *Tetraogallus himalayensis*, Himalayan Monal *Lophophorus impejanus*, and Koklass Pheasant *Pucrasia macrolopha* are found here, but data on other birdlife is lacking. The site is considered Data Deficient till we have more information on avifauna.

OTHER KEY FAUNA

Sechu Tuan is a high altitude sanctuary with significant populations of Himalayan Ibex *Capra sibirica* and Alpine Musk Deer *Moschus chrysogaster*. Snow Leopard *Panthera uncia* has also been reported (Singh *et al.* 1990).

In the alpine and sub-alpine regions, besides the Snow Leopard, Asiatic Ibex *Capra sibirica*, Greater Blue Sheep *Pseudois nayaur*, and Himalayan Mouse Hare or Indian Pika *Ochotona roylei* have been recorded. At slightly lower elevations, Asiatic Black Bear *Ursus thibetanus*, Brown Bear *Ursus arctos*, Himalayan Brown Goral *Naemorhedus goral*, Himalayan Serow *Capricornis thar*, and Himalayan Tahr *Hemitragus jemlahicus* can be seen.

LAND USE

- Agriculture
- Grazing

THREATS AND CONSERVATION ISSUES

- Human habitation
- Firewood collection
- Illegal felling of trees
- Forest fires

The villagers hold rights or leases for the collection of timber and fuelwood, agriculture, settlement, burial grounds, and religious practices. Outside the sanctuary area,

VULNERABLE	
Western Tragopan	<i>Tragopan melanocephalus</i>
NEAR THREATENED	
Himalayan Griffon	<i>Gyps himalayensis</i>
ENDEMIC BIRD AREA 128: WESTERN HIMALAYA	
Western Tragopan	<i>Tragopan melanocephalus</i>
BIOME 5: EURASIAN HIGH MONTANE	
Himalayan Griffon	<i>Gyps himalayensis</i>
Himalayan Snowcock	<i>Tetraogallus himalayensis</i>
Snow Partridge	<i>Lerwa lerwa</i>
Snow Pigeon	<i>Columba leuconota</i>
Alpine Accentor	<i>Prunella collaris</i>
BIOME 7: SINO HIMALAYAN TEMPERATE FOREST	
Koklass Pheasant	<i>Pucrasia macrolopha</i>
Himalayan Monal	<i>Lophophorus impejanus</i>
Dark-grey Tit	<i>Parus rufonuchalis</i>
Green-backed Tit	<i>Parus monticolus</i>

the timber extraction goes on under the Forest Development Corporation, and the Forest Department maintains three nurseries (Singh *et al.* 1990).

Rodgers & Panwar (1988) recommended upgrading this sanctuary to a National Park, as this site still has viable populations of high altitude mammals and pheasants.

KEY CONTRIBUTOR

Sanjeeva Pandey.

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- Rodger, W.A. and Panwar, H.S. (1988) *Planning a Protected Area Network in India*. 2 vols. Wildlife Institute of India, Dehradun.
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Link: <http://timesofindia.indiatimes.com/city/chandigarh/775-Himachal-villages-excluded-from-sanctuary-areas/articleshow/26435686.cms>

SHIKARI DEVI WILDLIFE SANCTUARY

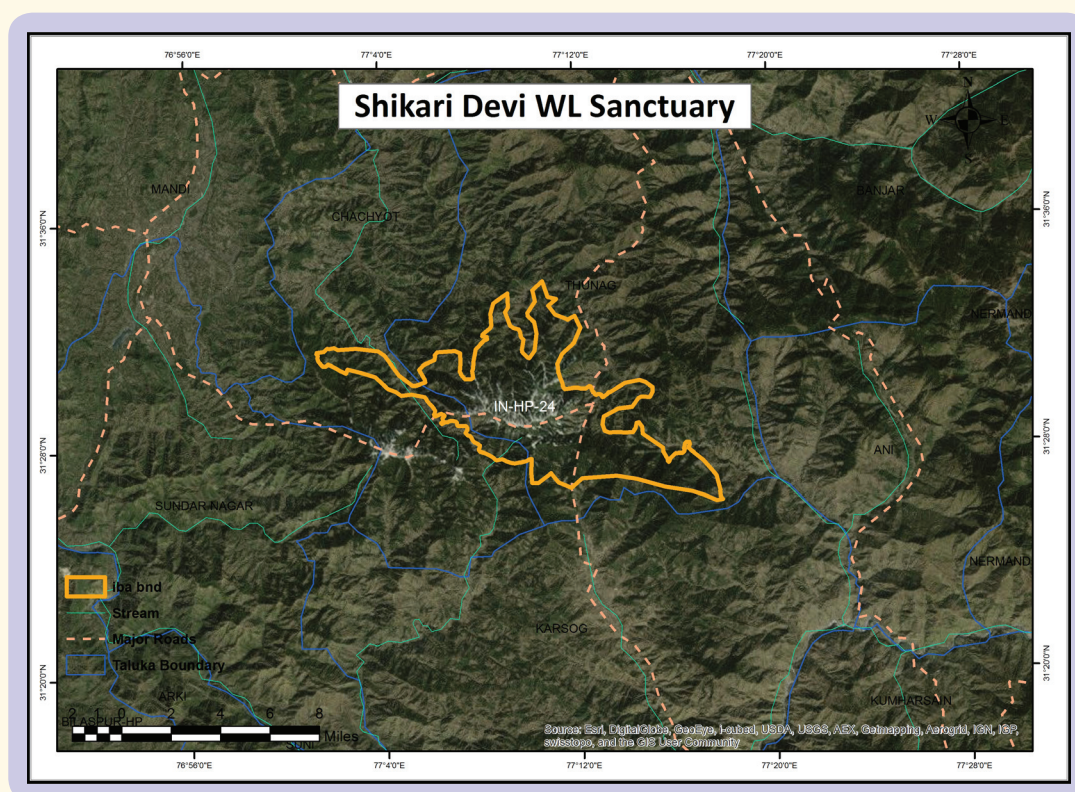
IN-HP-24

IBA Site Code	: IN-HP-24
State	: Himachal Pradesh
District	: Mandi
Coordinates	: 31° 29' 58.572" N, 77° 9' 50.182" E
Ownership	: State
Area	: 2,994 ha

Altitude	: 1,800–3,359 msl
Rainfall	: 1,038 mm
Temperature	: Not available
Biogeographic Zone	: Himalaya
Habitats	: Himalayan Moist Temperate Forest, Sub-alpine Forest, Alpine Moist Scrub

IBA CRITERIA : A1 (Threatened species), A2 (Endemic Bird Area 128: Western Himalaya), A3 (Biome 5: Eurasian High Montane, Biome 7: Sino-Himalayan Temperate Forest)

PROTECTION STATUS : Wildlife Sanctuary, established in 1962.



GENERAL DESCRIPTION

This high altitude sanctuary is named after the goddess Shikari Devi, to whom a temple is dedicated, and the place is considered sacred by Hindus. An area of 7,200 ha surrounding the temple was declared a sanctuary in 1962. After the exercise of rationalisation of boundaries of PAs in Himachal Pradesh, nearly all the villages are now outside the sanctuary. Nearly 40 villages are present inside the sanctuary, and many more in the surrounding areas. However, there are still good habitats for wild animals. Even the Snow Leopard *Panthera uncia* has been reported from this site in winter, but the report needs confirmation.

Shikari Devi WLS has seven forest types, according to the classification by Champion & Seth (1968): i. Alpine Pasture,

ii. Sub-alpine Forest, iii. Moist Temperate Deciduous Forest, iv. West Himalayan Upper Oak/Fir Forest, v. Kharsu Oak Forest, vi. Western Mixed Coniferous Forest, and vii. Ban Oak Forest (Singh *et al.* 1990). This sanctuary covers the middle altitudinal range of the Himalaya from 1,800 to 3,400 m, showing transition from Pine through Oak to Alpine meadow (Rodgers & Panwar 1988; Kumari *et al.* 2013). There are some good patches of Temperate Forest that have the representative bird fauna of the Western Himalaya.

AVIFAUNA

Not much information is available about the birdlife of this site, except that the globally Threatened Cheer Pheasant *Catreus wallichii* is found, probably in good numbers.

VULNERABLE

Cheer Pheasant	<i>Catreus wallichii</i>
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NEAR THREATENED

Himalayan Griffon	<i>Gyps himalayensis</i>
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ENDEMIC BIRD AREA 128: WESTERN HIMALAYA

Cheer Pheasant	<i>Catreus wallichii</i>
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BIOME 5: EURASIAN HIGH MONTANE

Himalayan Griffon	<i>Gyps himalayensis</i>
Rufous-streaked Accentor	<i>Prunella himalayana</i>
Plain-backed Thrush	<i>Zoothera mollissima</i>
Tickell's Leaf-warbler	<i>Phylloscopus affinis</i>
Wallcreeper	<i>Tichodroma muraria</i>

BIOME 7: SINO-HIMALAYAN TEMPERATE FOREST

Koklass Pheasant	<i>Pucrasia macrolopha</i>
Himalayan Monal	<i>Lophophorus impejanus</i>
Dark-grey Tit	<i>Parus rufonuchalis</i>
Green-backed Tit	<i>Parus monticolus</i>

Himalayan Monal *Lophophorus impejanus*, Koklass Pheasant *Pucrasia macrolopha*, Kaleej *Lophura leucomelana*, and Western Tragopan *Tragopan melanocephalus* are also found. The last species needs confirmation.

This IBA lies in the Western Himalaya Endemic Bird Area (EBA 128). It also has biome-restricted species of Biome 5 (Eurasian High Montane) and Biome 7 (Sino-Himalayan Temperate Forest). BirdLife International (undated) has listed 48 species in Biome 5. From the preliminary list that we have, we found only five Biome 7 species, most of them quite common and of no conservation concern. Similarly, in Biome 7, 112 species are listed, but we found published evidence of only four species. This indicates paucity of information rather than paucity of birdlife of this IBA.

OTHER KEY FAUNA

Shikari Devi WLS has several high altitude mammals such as Asiatic Black Bear *Ursus thibetanus* and Himalayan Brown Goral *Naemorhedus goral*. At the temperate forest level, Leopard *Panthera pardus*, Barking Deer *Muntiacus muntjak*, Nepal Gray Langur *Semnopithecus schistaceus*, and Rhesus Macaque *Macaca mulatta* are reported. Red Giant Flying Squirrel *Petaurista petaurista*, Kashmir Flying Squirrel *Eoglaucomys fimbriatus*, Stone Marten *Martes*

foina, and Himalayan Weasel *Mustela sibirica* are also found here. There is no information on the reptile fauna of this IBA.

LAND USE

- Agriculture
- Nature conservation

THREATS AND CONSERVATION ISSUES

- Grazing
- Human habitation
- Collection of fuel wood and other forest produce
- Poaching

Despite its sacred status, the sanctuary is under tremendous anthropogenic pressure from fuelwood collection, cattle grazing (both local and nomadic), and collection of minor forest produce, medicinal plants, and grass. The newest threat to this IBA is the *van* (forest) mafia which is responsible for illegal cutting of Deodar trees. During the annual religious fair in May-June, thousands of pilgrims visit the shrine and also put pressure on the scarce resources. Pheasants and smaller animals are trapped for the pot.

KEY CONTRIBUTOR

Sanjeeva Pandey.

KEY REFERENCES

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<http://www.tribuneindia.com/2010/20100524/himachal.htm#4>

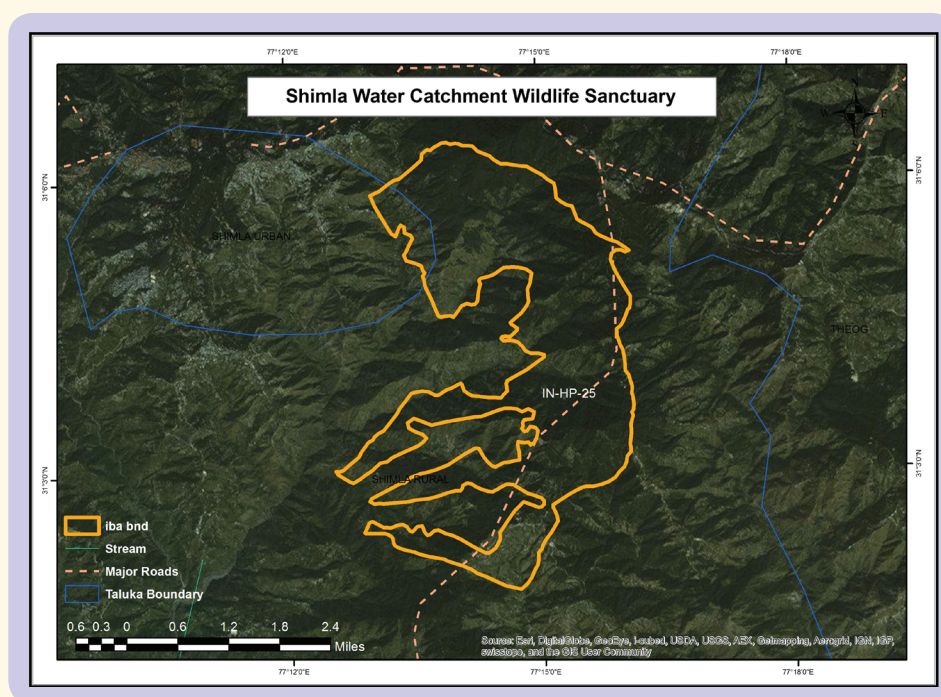
SHIMLA WATER CATCHMENT WILDLIFE SANCTUARY

IN-HP-25

IBA Site Code	: IN-HP-25	Altitude	: 1,500–3,324 msl
State	: Himachal Pradesh	Rainfall	: 874 mm
District	: Shimla, Kufri	Temperature	: 7 °C to 28 °C
Coordinates	: 31° 6' 10.618" N, 77° 14' 48.995" E	Biogeographic Zone	: Himalaya
Ownership	: State	Habitats	: Himalayan Moist Temperate Forest
Area	: 1000 ha		

IBA CRITERIA: A1 (Threatened species), A2 (Endemic Bird Area 128: Western Himalaya), A3 (Biome 7: Sino-Himalayan Temperate Forest)

PROTECTION STATUS: Wildlife Sanctuary, established in 1958. Data Deficient.



GENERAL DESCRIPTION

This IBA is one of the few sanctuaries in the state which are free from human habitation, mainly due to a long history of protection and the steep terrain which discourages human habitation. It was protected in British India as the catchment area for water supply to Shimla, the summer capital of the British. After Independence in 1947, the area came under state control and was notified as a protected forest in 1952. To the south, it is connected by a forest corridor to Chail Wildlife Sanctuary (another IBA). The sanctuary area is within the purview of the Shimla Municipal Corporation.

The entire sanctuary is forested, mostly with temperate coniferous forest. Cedar *Cedrus deodara* is predominant, mixed with Ban Oak *Quercus incana* and Chir Pine *Pinus roxburghii* at lower altitudes, and Fir *Abies pindrow*, Blue Pine *Pinus wallichiana*, Moru Oak *Quercus dilatata*, and Spruce *Picea*

smithiana at higher altitudes. Shrub and ground layers are generally well developed, with shrubs covering 50% of the area. Ground vegetation is mainly grasses, but includes a variety of ferns and forbs (Gaston 1979). Some of the common plants found here are *Habenaria intermedia*, *Primula denticulata*, *Androsace sarmentosa*, *Himalrandia tetrasperma*, *Jasminum dispersum*, *Hypericum cernuum*, *Impatiens scabrida*, *Geranium wallichianum*, and *Erysimum hieracifolium*.

An excellent initiative has been taken up by the State Forest Department in introducing battery operated golf carts instead of traditional fuel-run cars for safaris, thereby reducing the level of noise and air pollution.

AVIFAUNA

Documentation on the avifauna of this IBA is limited to pheasants (Sharma and Pandey 1989). The density

VULNERABLE

Cheer Pheasant	<i>Catreus wallichii</i>
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ENDEMIC BIRD AREA 128: WESTERN HIMALAYA

Cheer Pheasant	<i>Catreus wallichii</i>
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BIOME 7: SINO-HIMALAYAN TEMPERATE FOREST

Koklass Pheasant	<i>Pucrasia macrolopha</i>
Speckled Woodpigeon	<i>Columba hodgsonii</i>
Himalayan Woodpecker	<i>Dendrocopos himalayensis</i>
Dark-grey Tit	<i>Parus rufonuchalis</i>
Spot-winged Tit	<i>Parus melanolophus</i>
Green-backed Tit	<i>Parus monticolus</i>
Yellow-billed Blue Magpie	<i>Urocissa flavirostris</i>

of Koklass Pheasant *Pucrasia macrolopha*, estimated at 17–25 pairs per sq. km in April 1979, is probably close to the maximum reached under natural conditions (Gaston *et al.* 1981). The population of Kaleej Pheasant *Lophura leucomelanos* also appears to be large (Gaston *et al.* 1981) but present density estimates are not available.

This IBA lies in the Western Himalaya Endemic Bird Area (EBA 128). It also has biome-restricted species of Biome 7 (Sino-Himalayan Temperate Forest) and some of Biome 8 (Sino-Himalayan Subtropical Forest). BirdLife International (undated) has listed 112 species in Biome 7. From the preliminary list that we have, we found only seven of these species at this site, most of them quite common and of no conservation concern. Similarly, in Biome 8, 95 species are listed by BirdLife International (undated), but we found published information on the occurrence of only four of these species from this site. This shows paucity of information rather than paucity of birdlife this IBA.

This site is an IBA due to the presence of the globally Threatened Cheer Pheasant, and middle-altitude forest of the lower ranges of Western Himalaya. As there is not much information on the birdlife, this site is considered Data Deficient.

OTHER KEY FAUNA

Large mammals of this IBA include Leopard *Panthera pardus*, Barking Deer or Indian Muntjac *Muntiacus muntjak*, and Himalayan Brown Goral *Naemorhedus goral*. Non-human primates include Rhesus Macaque *Macaca mulatta* and Common Langur *Semnopithecus schistaceus*. Yellow-throated Marten *Martes flavigula* and Indian Crested Porcupine *Hystrix indica* are also found (Gaston *et al.* 1981, 1983). Flying Squirrel *Petaurista petaurista* is present, but Alpine Musk Deer *Moschus chrysogaster*, of which Gaston

(1979) had found signs in this area, may be locally extinct (Green 1981).

LAND USE

- Nature conservation and research
- Water catchment

THREATS AND CONSERVATION ISSUES

- Illegal grazing

Shimla Water Catchment area represents the final remnant of undisturbed middle altitude forest in the lower ranges of Western Himalaya and is the main water catchment area for Shimla (Gaston *et al.* 1981, Singh *et al.* 1990).

Apart from a little tree felling during World War II, the area has been totally protected, since settlements were relocated in the early 20th century (Gaston *et al.* 1981). Public access is prohibited, but permits are issued for extraction of fodder.

KEY CONTRIBUTOR

IBA Team.

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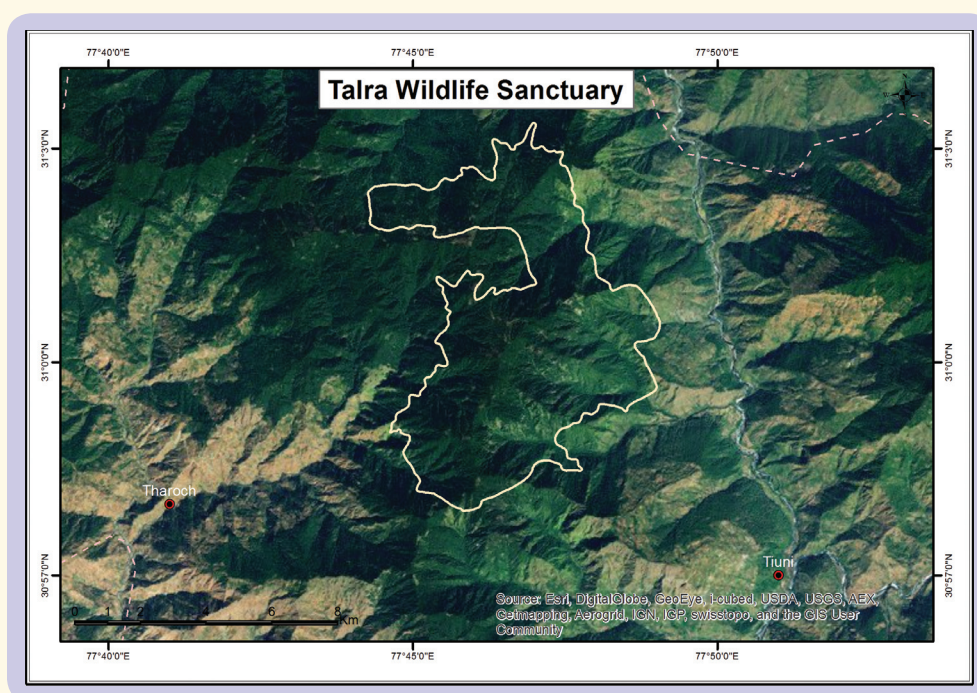
TALRA WILDLIFE SANCTUARY

IN-HP-26

IBA Site Code	: IN-HP-26	Altitude	: 1,500–3,324 msl
State	: Himachal Pradesh	Rainfall	: 874 mm + snowfall
District	: Shimla	Temperature	: -7 °C to 28 °C
Coordinates	: 31° 0' 56.959" N, 77° 46' 43.624" E	Biogeographic Zone	: Himalaya
Ownership	: State	Habitats	: Himalayan Moist Temperate Forest
Area	: 4,648 ha		

IBA CRITERIA: A1 (Threatened species), A2 (Endemic Bird Area 128: Western Himalaya) A3 (Biome 7: Sino-Himalayan Temperate Forest, Biome 8: Sino-Himalayan Subtropical Forest)

PROTECTION STATUS: Wildlife Sanctuary, established in September, 1962.



GENERAL DESCRIPTION

Talra Wildlife Sanctuary was first notified in 1962 and then renotified in 1974, under the Indian Wildlife (Protection) Act 1972. During the British period, and for almost two decades after Independence, it was a popular hunting ground for big game as well as birds. Hunters used to come here for Asiatic Black Bear *Ursus thibetanus*, Barking Deer *Muntiacus muntjak*, and pheasants. Poachers hunted Alpine Musk Deer *Moschus chrysogaster*. In order to protect these animals, and also to protect the catchment areas of perennial streams, this sanctuary came into being. However, due to the growth in human population, very few areas are now left undisturbed. Only steep and inaccessible areas harbour natural forest and wildlife (Singh *et al.* 1990).

Two main forest types seen here are: West Himalayan Upper Oak/Fir Forest and Lower Western Himalayan

Temperate Forest, according to the classification of Champion & Seth (1968).

AVIFAUNA

The globally Threatened Cheer Pheasant *Catreus wallichii* and Western Tragopan *Tragopan melanocephalus* are seen in small numbers, while Himalayan Monal *Lophophorus impejanus* and Koklass Pheasant *Pucrasia macrolopha* are fairly common.

Mahabal (2000) has identified 61 bird species from this sanctuary; 51 are resident birds, most of them quite common. The site lies in Biome 7 (Sino-Himalayan Temperate Forest) and Biome 8 (Sino-Himalayan Subtropical Forest). Birds of both these biomes were seen, but most birds belong to Biome 7. Biome 7 occurs between c. 1,800 m and 3,600 m, which is also the altitudinal range of this site (1,500–3,324 m). Biome 8 ranges from c. 1,000 m to 2,000 m, so to some altitudinal

VULNERABLE

Western Tragopan	<i>Tragopan melanocephalus</i>
Cheer Pheasant	<i>Catreus wallichii</i>

NEAR THREATENED

Himalayan Griffon	<i>Gyps himalayensis</i>
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ENDEMIC BIRD AREA 128: WESTERN HIMALAYA

Western Tragopan	<i>Tragopan melanocephalus</i>
Cheer Pheasant	<i>Catreus wallichii</i>

BIOME 7: SINO-HIMALAYAN TEMPERATE FOREST

Koklass Pheasant	<i>Pucrasia macrolopha</i>
Himalayan Monal	<i>Lophophorus impejanus</i>
Speckled Woodpigeon	<i>Columba hodgsonii</i>
Himalayan Woodpecker	<i>Dendrocopos himalayensis</i>
White-throated Laughingthrush	<i>Garrulax albogularis</i>
Striated Laughingthrush	<i>Grammatoptila striata</i>
Streaked Laughingthrush	<i>Garrulax lineatus</i>
Variegated Laughingthrush	<i>Garrulax variegatus</i>
Rufous Sibia	<i>Heterophasia capistrata</i>
Grey-sided Bush-warbler	<i>Cettia brunnifrons</i>
Buff-barred Leaf-warbler	<i>Phylloscopus pulcher</i>
Western Crowned Warbler	<i>Phylloscopus occipitalis</i>
Rusty-tailed Flycatcher	<i>Muscicapa ruficauda</i>
Rufous-bellied Niltava	<i>Niltava sundara</i>
Dark-grey Tit	<i>Parus rufonuchalis</i>
Rufous-vented Tit	<i>Parus rubidiventris</i>
Spot-Winged Tit	<i>Parus melanolophus</i>
Green-backed Tit	<i>Parus monticolus</i>
Yellow-browed Tit	<i>Sylviparus modestus</i>
Bar-tailed Treecreeper	<i>Certhia himalayana</i>
Yellow-breasted Greenfinch	<i>Carduelis spinoides</i>
Yellow-billed Blue Magpie	<i>Urocissa flavirostris</i>

BIOME 8: SINO-HIMALAYAN SUB TROPICAL FOREST

Tickell's Thrush	<i>Turdus unicolor</i>
Grey-winged Blackbird	<i>Turdus boulboul</i>
Rusty-cheeked Scimitar-babbler	<i>Pomatorhinus erythrogenys</i>
Striated Prinia	<i>Prinia criniger</i>
Black-throated Tit	<i>Aegithalos concinnus</i>

extent, these two biomes overlap. Moreover, many species show altitudinal movement, so it is not unexpected that they are seen in different biomes. At this IBA site, 22 species of Biome 7, five species of Biome 8, and one species of Biome 5 (Himalayan Griffon *Gyps himalayensis*) are found.

This IBA lies in the Western Himalaya Endemic Bird Area (EBA 128). Two restricted-range species, are found (see Table), both also are globally Threatened (BirdLife International 2001).

OTHER KEY FAUNA

Asiatic Black Bear *Ursus thibetanus* and Leopard *Panthera pardus* are the major predators on Barking Deer *Muntiacus*

muntjak, and Himalayan Brown Goral *Naemorhedus goral*. Nepal Grey Langur *Semnopithecus schistaceus* is frequently seen, especially at lower elevations.

Verma *et al.* (2008) describes 75 species of plants comprising seven grasses, four sedges, four leguminous forbs, and 60 non-leguminous forbs from this sanctuary. Some of the common species here are *Sibbaldia cuneata*, *Geum elatum*, *Ligularia amplexicaulis*, *Primula denticulata*, and *Saxifraga parnassifolia*. Apart from these, many medicinal plants have been reported in this IBA.

LAND USE

- Agriculture
- Human habitation
- Grazing
- Collection of Non-timber Forest Produce

THREATS AND CONSERVATION ISSUES

- Grazing
- Poaching
- Tree felling

Biotic pressure in this IBA is extremely high. There is one village inside the sanctuary and seven on the periphery, with a total population of more than 5,000. Villagers have rights and leases for cattle grazing, collection of Non Timber Forest Produce, fuel wood and medicinal plants. Gujjar nomads from outside also come to this area to graze their cattle. All this puts great pressure on the limited resources of this small sanctuary.

KEY CONTRIBUTOR

IBA Team.

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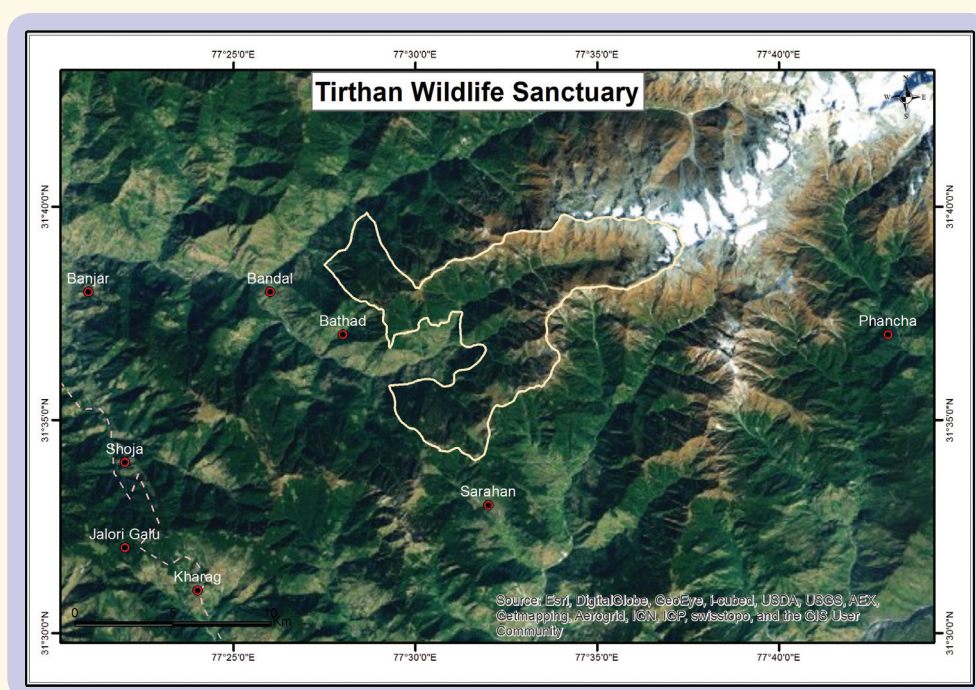
TIRTHAN WILDLIFE SANCTUARY (MERGED WITH GREAT HIMALAYAN NP)

IN-HP-27

IBA Site Code	: IN-HP-27	Rainfall	: 1,500 mm
State	: Himachal Pradesh	Temperature	: -5 °C to 30 °C
District	: Kullu	Biogeographic Zone	: Himalaya
Coordinates	: 31° 36' 49" N, 77° 34' 21" E	Habitats	: Alpine Moist Scrub, Alpine Arid Pasture, Montane Grassy Slopes, Subtropical Broadleaf Hill Forest
Ownership	: State		
Area	: 6,112 ha		
Altitude	: 2,100–4,875 msl		

IBA CRITERIA: A1 (Threatened species), A2 (Endemic Bird Area 128: Western Himalaya), A3 (Biome 7: Sino-Himalayan Temperate Forest)

PROTECTION STATUS: Wildlife Sanctuary, established 1992.



GENERAL DESCRIPTION

This high altitude sanctuary in Kullu district is adjacent to the Great Himalayan National Park (an IBA). Some of its originally declared area has now been included in the Great Himalayan National Park. The sanctuary forms part of the catchment area of the Tirthan river. It has a great variety of forest types due to the variations in altitude.

The forest types include Ban Oak Forest, Moist Deodar Forest, Western Mixed Coniferous Forest, Moist Temperate Deciduous Forest, and Kharsu Oak Forest, and there are alpine pastures (Singh *et al.* 1990).

AVIFAUNA

Except for a brief description in Singh *et al.* (1990), not much information is available in the literature, particularly

on the avifauna of this area. Western Tragopan *Tragopan melanocephalus*, Cheer Pheasant *Catreus wallichi*, and Himalayan Griffon *Gyps himalayensis*, three globally Threatened species, are found here. Other pheasants found in Tirthan are Himalayan Monal *Lophophorus impejanus*, Koklass Pheasant *Pucrasia macrolopha*, and Red Junglefowl *Gallus gallus*.

According to the endemic bird areas of the world, described by Stattersfield *et al.* (1998), Tirthan WLS would come under the Western Himalaya Endemic Bird Areas (EBA 128). This important EBA of India has 11 restricted-range (endemic) birds, of which three have been identified from this site. Once we have a detailed birdlist, perhaps more restricted-range species would be found.



DHIRTIMAN MUKHERJEE

The vegetation of Tirthan Wildlife Sanctuary ranges from Sub-tropical Broadleaf Hill Forest (above) to Arid Alpine pastures

Tirthan WLS also has biome-restricted species of Biome 7 (Sino-Himalayan Temperate Forest) and Biome 5 (Eurasian High Montane – Alpine and Tibetan). BirdLife International (undated) has listed 112 species in Biome7. We could find evidence of only two Biome 7 species. Here again, we do not know how many more birds of this biome are found due to lack of a good birdlist. Similarly, data on Biome 5 species are also lacking. Based on the available list of mammals and the extent of forest cover available, it is likely that many restricted-range and biome-restricted bird species would be present in this IBA. As it adjoins Great Himalayan NP, where the birdlife is comparatively better known (300 species of birds: Gaston *et al.* 1993), it is likely that a similar number of birds are present in Tirthan also. Nevertheless,

presently we are treating this as a Data Deficient site. We have included Tirthan WLS in the IBA list based on confirmed evidence of three globally Threatened and three restricted-range species.

OTHER KEY FAUNA

This high altitude sanctuary has records of Snow Leopard *Panthera uncia* and its wild ungulate prey such as Greater Blue Sheep or Bharal *Pseudois nayaur*, Alpine Musk Deer *Moschus chrysogaster*, and Himalayan Tahr *Hemitragus jemlahicus*. At lower elevations, Barking Deer *Muntiacus muntjak*, Asiatic Ibex *Capra sibirica*, and Himalayan Serow *Capricornis thar*, and their predator Leopard *Panthera pardus* have been reported. Other large mammals include Brown Bear *Ursus arctos* and Asiatic Black Bear *Ursus thibetanus*. The Red Giant Flying Squirrel *Petaurista petaurista albiventer*, Kashmir Flying Squirrel *Eoglaucomys fimbriatus*, Stone Marten *Martes foina*, Himalayan Weasel *Mustela sibirica*, Golden Jackal *Canis aureus*, and Nepal Gray Langur *Semnopithecus schistaceus* are also mammal species recorded.

LAND USE

- Nature conservation and research
- Tourism and recreation
- Agriculture.

VULNERABLE

Western Tragopan	<i>Tragopan melanocephalus</i>
Cheer Pheasant	<i>Catreus wallichi</i>

NEAR THREATENED

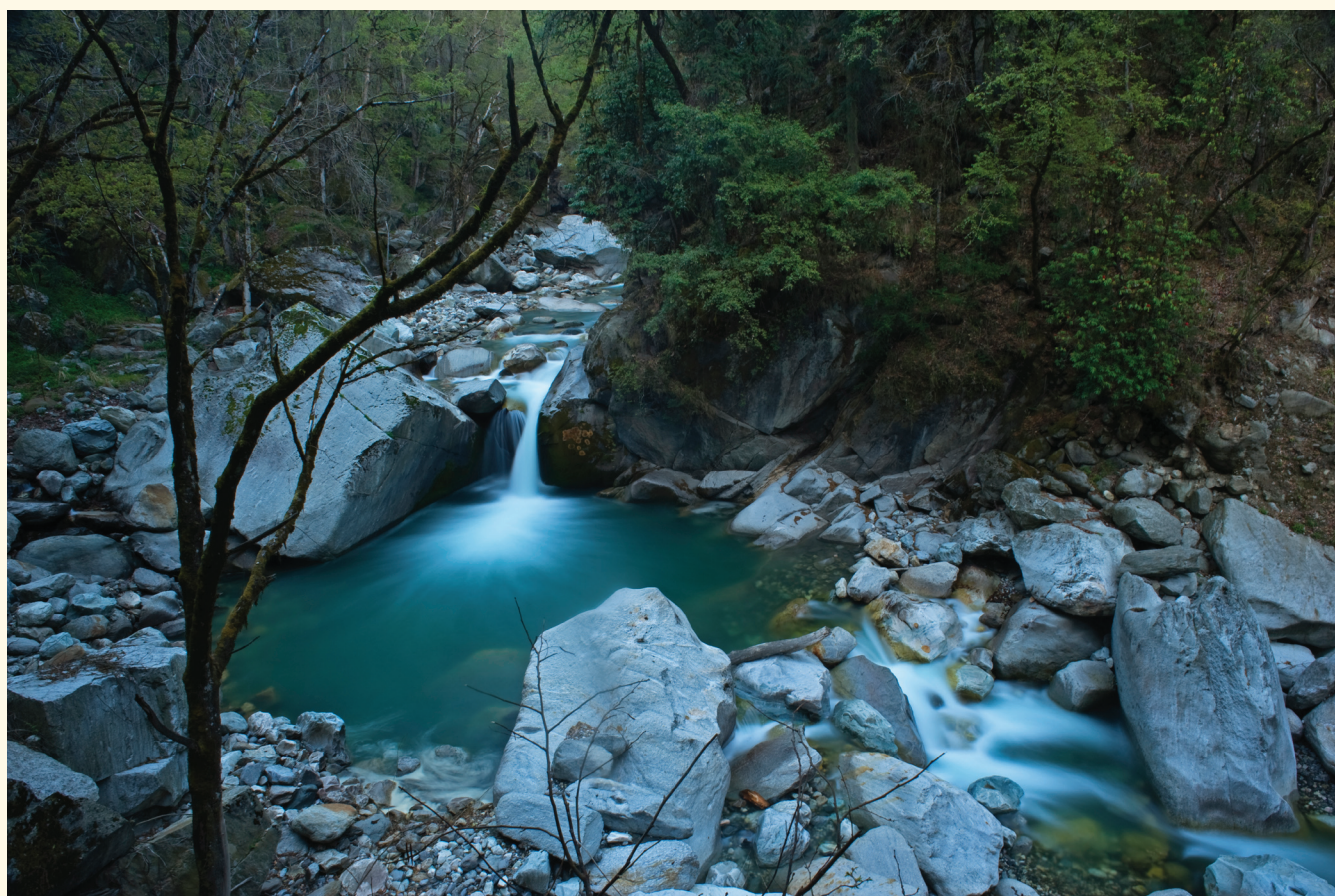
Himalayan Griffon	<i>Gyps himalayensis</i>
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ENDEMIC BIRD AREA 128: WESTERN HIMALAYA

Western Tragopan	<i>Tragopan melanocephalus</i>
Cheer Pheasant	<i>Catreus wallichi</i>
White-cheeked Tit	<i>Aegithalos leucogenys</i>

BIOME7: SINO-HIMALAYAN TEMPERATE FOREST

Koklass Pheasant	<i>Pucrasia macrolopha</i>
Himalayan Monal	<i>Lophophorus impejanus</i>



DHRITIMAN MUKHERJEE

Tirthan Sanctuary forms part of the catchment area of Tirthan river. There is a need to do a biodiversity assessment of this IBA

THREATS AND CONSERVATION ISSUES

- Burning of vegetation
- Grazing
- Firewood collection
- Timber extraction
- Mining

The people living in the surrounding areas have rights to cattle grazing, quarrying, agriculture, collection of timber, fuel wood, and minor forest produce. The majority of the area is used for agricultural purposes. Crops grown here include wheat, maize, barley, sariyara, kodra, kathu, potato, peas, and rajmah. Horticultural produce includes apple, pear, plum, apricot, peach, cherry, and almond (Chauhan 1999).

KEY CONTRIBUTOR

IBA team.

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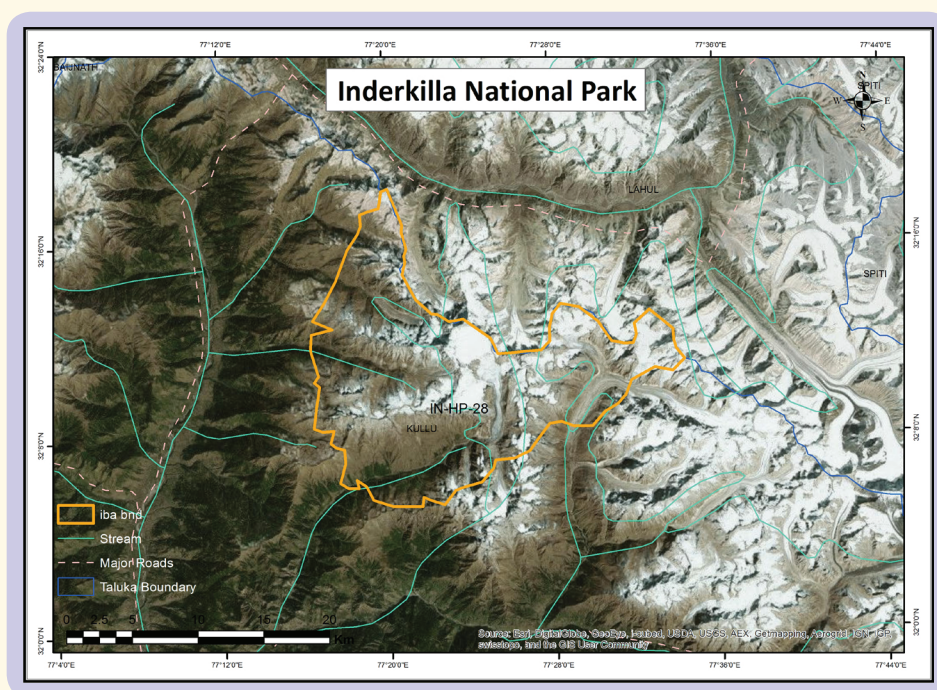
INDERKILLA NATIONAL PARK

IN-HP-28

IBA Site Code	: IN-HP-28	Altitude	: 3,500–5,290 msl
State	: Himachal Pradesh	Rainfall	: 1,500 mm
District	: Kullu	Temperature	: -5 °C to 30 °C
Coordinates	: 77° 17' 20.194" E, 32° 14' 48.632" N	Biogeographic Zone	: Himalaya
Ownership	: State	Habitats	: Sub-alpine Dry Scrub, Alpine Moist Pasture, Sub-tropical Broadleaf Hill Forest
Area	: 94 sq. km		

IBA CRITERIA: A1 (Threatened species), A2 (Endemic Bird Area 128: Western Himalaya), A3 (Biome representative species)

PROTECTION STATUS: National Park, Initial notification in 2010.



GENERAL DESCRIPTION

Inderkilla National Park is located on the massive Pir Panjal range in the Greater Himalaya. The most recognizable pass here is Hamta Pass (4,227 msl), which is approachable from above the 192-MW Alain Duhangan Hydro Electric Project above Manali town. One can drive up the 12 km long project road starting from Prini village on Manali-Nagar State Highway. Sethan is the starting point of a trek into Inderkilla NP. Jabri Nalla crosses the beginning of the Hamta Pass trek. Chhikka and Ratan Thali are well-known areas along the trek to Hamta Pass.

The vegetation type, as classified by Champion & Seth (1968), includes Alpine Pastures, Kharsu Oak Forest, Moist Temperate Deciduous Forest, Western Mixed Coniferous Forest, Moist Deodar Forest, and Ban Oak Forest. Juniper *Juniperus communis* is present above the tree-line, along with Rhododendron.

AVIFAUNA

At least 149 species of birds have been recorded from the Manali area (Gaston *et al.* 1981), including Hamta Pass. Western Tragopan *Tragopan melanocephalus*, Himalayan Monal *Lophophorus impejanus*, and Koklass Pheasant *Pucrasia macrolopha* are present in small numbers. The Monal population is much larger, in the range of 250 pairs. Koklass is the most abundant large pheasant in Inderkilla Park, common at the lower end of Hamta Nullah and Solang Nullah. This site is selected as an IBA mainly because of its good population of the globally Threatened Western Tragopan.

Historically, the Hamta Pass area had Cheer Pheasant *Catreus wallichii*, even as late as the 1980s. Its status since then is not known, mainly due to lack of proper surveys. As the Cheer Pheasant can survive in slightly disturbed habitat (Kaul 1989, Garson *et al.* 1992, BirdLife International 2001),



Despite its small size, Inderkilla National Park has Juniper Forest, Ban Oak Forest, Moist Deodar Forest, Mixed Coniferous Forest, Moist Temperate Deciduous Forest, and Alpine Pastures. Nearly 150 species of birds have been recorded from this IBA, including Endangered, Vulnerable, and Near Threatened species

it could still be surviving in some part of this IBA.

In the higher reaches in the alpine zone, Himalayan Snowcock *Tetraogallus himalayensis* and Snow Partridge

Lerwa lerwa are seen, representing Biome 5 species.

OTHER KEY FAUNA

Among larger mammals, 18 species have been recorded in the Manali area (Gaston *et al.* 1981, 1983; Singh *et al.* 1990). These include the Asiatic Black Bear *Ursus thibetanus*, Brown Bear *Ursus arctos*, Leopard *Panthera pardus*, Musk Deer *Moschus chrysogaster*, and Serow *Naemorhedus sumatraensis*. Smaller carnivores include the Jungle Cat *Felis chaus*, Himalayan Palm Civet *Paguma larvata*, and Yellow-throated Marten *Martes flavigula*. Not much information is available on reptiles, amphibians, and fish.

LAND USE

- Tourism and recreation
- Nature conservation and research

THREATS AND CONSERVATION ISSUES

- Labour activities because of construction of Alain Duhangan Hydro Electric Project
- Livestock grazing
- Collection of fuel wood, timber, forest products
- Extraction of fodder
- Tourism and recreation

Inderkilla NP forms part of the catchment of Alain Nullah, an important tributary of the River Beas. People from nearby villages have rights to graze livestock, extract

ENDANGERED

Saker Falcon *Falco cherrug*

VULNERABLE

Eastern Imperial Eagle *Aquila heliaca*
Western Tragopan *Tragopan melanocephalus*

NEAR THREATENED

Cinereous Vulture *Aegypius monachus*

ENDEMIC BIRD AREA 128: WESTERN HIMALAYA

Western Tragopan *Tragopan melanocephalus*

BIOME 5: EURASIAN HIGH MONTANE

Snow Partridge *Lerwa lerwa*
Himalayan Snowcock *Tetraogallus himalayensis*
Grandala *Grandala coelicolor*

BIOME 7: SINO-HIMALAYAN TEMPERATE FOREST

Koklass Pheasant *Pucrasia macrolopha*
Himalayan Monal *Lophophorus impejanus*
Bar-throated Minla *Minla strigula*
Rufous-bellied Niltava *Niltava sundara*
Green-backed Tit *Parus monticolus*
Black-and-Yellow Grosbeak *Mycerobas icteroides*

BIOME 8: SINO-HIMALAYAN SUBTROPICAL FOREST

Blue-capped Rockthrush *Monticola cinclorhynchus*
Grey-winged Blackbird *Turdus boulboul* *Alit alit*



UDAYAN RAO PAWAR

Himalayan Snowcock *Tetraogallus himalayensis* is found in the alpine region of Inderkilla National Park. This site represents Biome 8 (Eurasian High Montane)

fodder, fuel wood, timber, and minor forest produce, and quarrying. Semi-nomadic Gujjars and Gaddis also have grazing rights.

KEY CONTRIBUTOR

Sanjeeva Pandey

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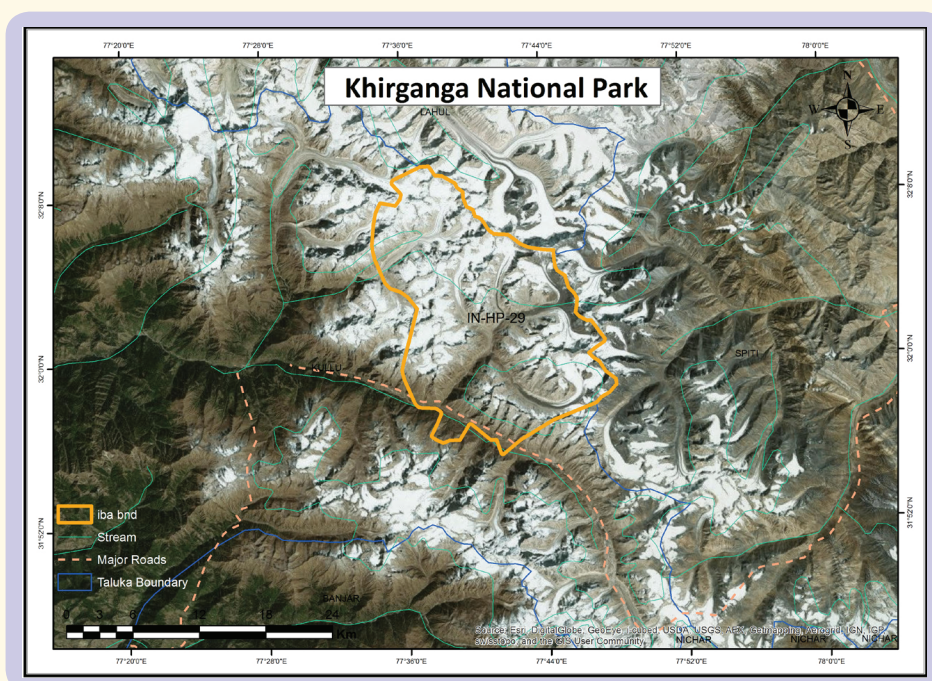
KHIRGANGA NATIONAL PARK

IN-HP-29

IBA Site Code	: IN-HP-29	Altitude	: 1,500–5,810 msl
State	: Himachal Pradesh	Rainfall	: 1,500 mm
District	: Kullu	Temperature	: -5 °C to 30 °C
Coordinates	: 77° 37' 53.153" E, 32° 02' 30.593" N	Biogeographic Zone	: Himalaya
Ownership	: State	Habitats	: Sub-alpine Dry Scrub, Alpine Moist Pasture, Sub-tropical Broadleaf Hill Forest
Area	: (705 sq. km) 70,500 ha		

IBA CRITERIA: A1 (Threatened species), A2 (Endemic Bird Area 128: Western Himalaya)

PROTECTION STATUS: National Park, established in 2010.



GENERAL DESCRIPTION

The sprawling Khirganga National Park in Kullu district has relatively undisturbed areas which support diverse Himalayan wildlife. The park lies in the upper catchment area of the Parvati river, which flows westwards and feeds the Beas river. It is bordered by the recently established World Heritage Site Great Himalayan National Park Conservation Area (2014) (905.5 sq. km), the Pin Valley National Park (675 sq. km) in Trans-Himalaya, and Kanawar Wildlife Sanctuary (61 sq. km). Together, these protected areas (PAs) add approximately 2,854.4 sq. km around GHNP. These constitute Himachal Pradesh's largest contiguous protected areas with regard to wildlife. The eastern part of Khirganga NP lies above the snowline, and has glaciers and permanent ice.

Because of its complex geography, overlap of multiple zones, and its great variations in altitude, the area

encompasses a very large range of plants, birds, and animals. These species span the subtropical to the alpine, and include those characteristic of Southeast Asian forests as well as those found across Siberia and the Asian steppes. Few sanctuaries present such a variety of wildlife habitats and biological diversity in such a vast area.

Based on the forest classification by Champion & Seth (1968), 11 forest types could be identified in Khirganga NP. Almost half the area is Alpine, with glaciers, followed by Dry Alpine pastures and scrubs. The vegetation of the lower part of Parvati Valley in Khirganga NP has its northern aspects clothed in dense forest, dominated by Blue Pine *Pinus wallichiana*, and higher up by a diverse Deciduous Broadleaf Forest on moderately sloping areas with Birch, Rhododendrons, and Junipers. West Himalayan Fir *Abies pindrow* is present on steep areas. East Himalayan Fir

SANJEEVA PANDEY



Khirganga NP lies in the upper catchment area of the Parvati river, which flows westwards and feeds the Beas river

Abies spectabilis is found in the higher reaches of this national park.

AVIFAUNA

Khirganga NP is particularly notable for its prolific pheasant populations. The park has almost similar birdlife to the Great Himalayan National Park (see Gaston *et al.* 1993) on the southern boundary. The Himalayan Monal *Lophophorus impejanus*, Koklass Pheasant *Pucrasia macrolopha*, Kaleej Pheasant *Lophura leucomelanos*, and Common Hill-partridge *Arborophila torqueola* are common, while Cheer Pheasant *Catreus wallichii* and Western Tragopan *Tragopan melanocephalus* have more restricted ranges. Chukar Partridge *Alectoris chukar*, Snow Partridge *Lerwa lerwa*, and Himalayan Snowcock *Tetraogallus himalayensis* occur in suitable habitats all over the park. Along with the adjoining PAs, Khirganga NP is a unique IBA in the Western Himalaya. This sprawling IBA lies in the Western Himalaya Endemic Bird Area (EBA 128) (Stattersfield *et al.* 1998), and has five out of 11 restricted-range species of EBA 128. Considering the undisturbed habitat available, more restricted-range species are expected to be found and some species would have a considerable percentage of their numbers in this IBA alone.

Ornithological investigations of this proposed IBA are by no means complete. In particular, the alpine areas have been little visited in summer, so the list of high altitude breeders is almost certainly incomplete. In addition, there have been few observations between November and February, when

VULNERABLE

Western Tragopan	<i>Tragopan melanocephalus</i>
Cheer Pheasant	<i>Catreus wallichii</i>

NEAR THREATENED

Cinereous Vulture	<i>Aegypius monachus</i>
Himalyan Griffon	<i>Gyps himalayensis</i>
Bearded Vulture	<i>Gypaetus barbatus</i>

ENDEMIC BIRD AREA 128: WESTERN HIMALAYA

Western Tragopan	<i>Tragopan melanocephalus</i>
Cheer Pheasant	<i>Catreus wallichii</i>
White-cheeked Tit	<i>Aegithalos leucogenys</i>
White-throated Tit	<i>Aegithalos niveogularis</i>
Spectacled Finch	<i>Callacanthus burtoni</i>
Orange Bullfinch	<i>Pyrrhula aurantiaca</i>

high altitude species may be driven down lower into the valley by heavy snow. Observations in winter, even at low altitudes, would also help to clarify the migratory status of many species. Further work in spring and summer is required to establish whether or not most of the species recorded so far actually breed within the park, and if so, in which altitude range and particular forest types. Visits in May, when weather conditions are usually good, would be especially valuable for this purpose.

The birdlife of Khirganga National Park is not very different from that of the Great Himalayan National Park Conservation Area, which is adjacent and has similar habitat variations (Sanjeeva Pandey, *pers. comm.* 2015).



SANJEEVA PANDEY

Due to the altitude ranging from 1,500–5,810 msl, Khirganga shows great variation in the vegetation, from Sub-tropical Broadleaf Forest to Sub-alpine Dry Scrub. This variation is represented by high bird diversity, particularly in the pheasants

OTHER KEY FAUNA

Khirganga NP has almost all the representative mammalian fauna of the higher altitude Western Himalaya. Carnivores such as Leopard *Panthera pardus* and both Asiatic Black Bear *Ursus thibetanus* and Brown Bear *Ursus arctos* are commonly encountered. Himalayan Tahr *Hemitragus jemlahicus* and Goral *Naemorhedus goral* occur in good numbers, and Serow *Naemorhedus sumatraensis* in smaller numbers. Himalayan Musk Deer *Moschus chrysogaster* has been recorded in Parvati Valley (Gaston *et al.* 1981). Bharal *Pseudois nayaur* is also found in the upper reaches of Parvati Valley.

LAND USE

- Grazing livestock
- Nature conservation and research
- Tourism and recreation
- Water management

THREATS AND CONSERVATION ISSUES

- Forest fires
- Construction of dams
- Grazing
- Firewood collection

Despite its large size and protected status, Khirganga NP is not free from human disturbances. Grazing in alpine meadows is the major land use. Thousands of sheep and goats graze in the park in the summer. The grazing rights need to be settled in the area for better conservation. The initial notification of the national park was done in 2010. This needs to be followed up by the long process of settlement of rights of herb collection and grazing. The locals are known to deliberately start fires in the forest area to catch escaping wild animals.

KEY CONTRIBUTOR

Sanjeeva Pandey

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LAMBRI FOREST (BANJAR FOREST DIVISION)

IN-HP-30

IBA Site Code : IN-HP-30

State : Himachal Pradesh

District : Kullu

Coordinates : 77° 22' 55" E 31° 31' 17 84" N

Ownership : State

Area : (c. 10 sq. km) 1,000 ha

Altitude : 3,59 msl

Rainfall : 1,000 mm

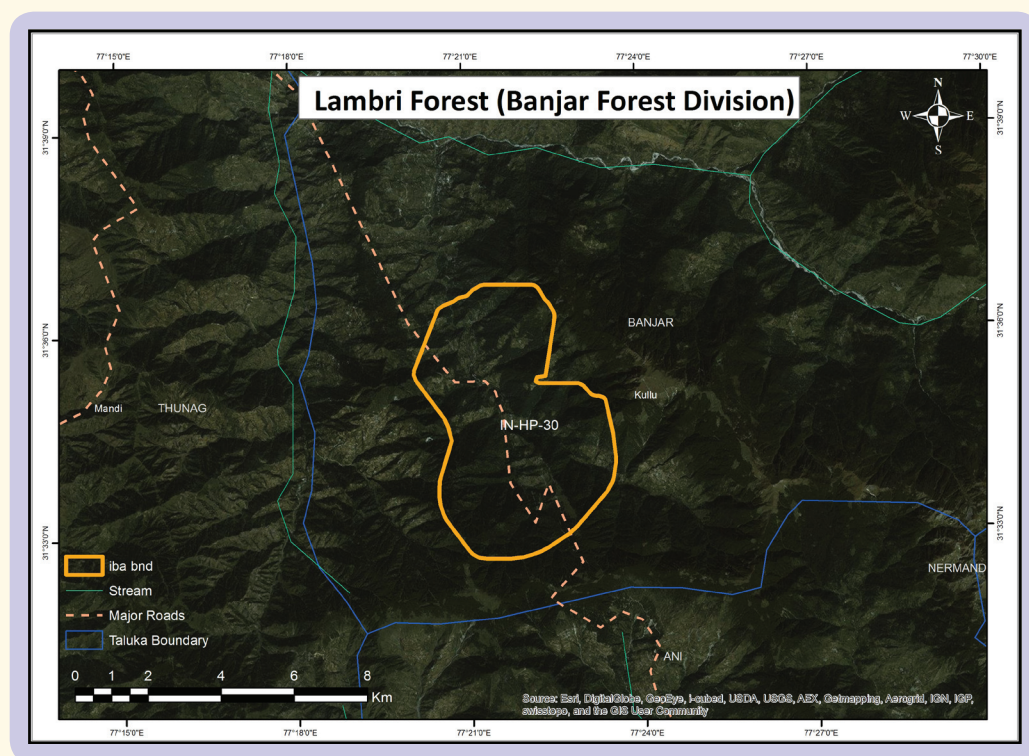
Temperature : -10 °C to 25 °C

Biogeographic Zone : Himalaya

Habitat : Alpine Dry Pasture,
Alpine Dry Scrub,
Alpine Moist Pasture,
Sub-tropical Broadleaf Hill Forest

IBA CRITERIA: A1 (Threatened species), A2 (Endemic Bird Area 128: Western Himalaya). Data Deficient.

PROTECTION STATUS: Not officially protected.



GENERAL DESCRIPTION

This small area of about 10 sq. km is situated in Banjar *tehsil* of Kullu district. Lambri is the highest point on a ridge which starts from Jalori Pass, which connects the Outer and Inner Seraj areas of Kullu district. The area is very good for its biological diversity in a limited space with forest types from low level Blue Pine forests to West Himalayan Dry Juniper forest, and alpine and sub-alpine areas. It has Rhododendrons and some Juniper. The Hirub rivulet emerges from this area, joins Tirthan river and finally drains into the Beas river.

AVIFAUNA

A small population of globally Threatened Western Tragopan *Tragopan melanocephalus* has been reported in this

area, due to which it was selected as an IBA. No detailed work has been done here on birds. This site certainly needs further studies on bird distribution, abundance, and densities.

As Lambri area adjoins the Great Himalayan National Park and also two newly created PAs, Khirganga NP and Inderkilla NP (both proposed as IBAs), the birdlife is likely to be very rich and varied. The detailed birdlist for the Great Himalayan National Park, which is on the western side of Lambri, is helpful in assessing the avifauna likely to be found in Lambri. At present we consider the site as Data Deficient.

OTHER KEY FAUNA

The most important mammal of this IBA is Goral *Naemorhedus goral*, and Asiatic Black Bear *Ursus thibetanus*.

IN-HP-30

THAKUR DALIP SINGH



The significant population of the pheasant Western Tragopan *Tragopan melanocephalus* is the trigger for the declaration of Lambri forest as an IBA

VULNERABLE

Western Tragopan	<i>Tragopan melanocephalus</i>
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NEAR THREATENED

Cinereous Vulture	<i>Aegypius monachus</i>
Himalayan Griffon	<i>Gyps himalayensis</i>
Bearded Vulture	<i>Gypaetus barbatus</i>

ENDEMIC BIRD AREA 128: WESTERN HIMALAYA

Western Tragopan	<i>Tragopan melanocephalus</i>
White-cheeked Tit	<i>Aegithalos leucogenys</i>
White-throated Tit	<i>Aegithalos niveogularis</i>
Spectacled Finch	<i>Callacanthis burtoni</i>

The smaller predators are Yellow-throated Marten *Martes flavigula*, Himalayan Palm Civet *Paguma larvata*, Himalayan Weasel *Mustela sibirica*, and Indian Red Fox *Vulpes vulpes*.

The Common Giant Flying Squirrel *Petaurista petaurista* is found in temperate forests at lower elevations.

LAND USE

- Nature conservation and research
- Tourism and recreation

THREATS AND CONSERVATION ISSUES

- Burning of vegetation
- Livestock grazing
- Firewood collection

KEY CONTRIBUTOR

Sanjeeva Pandey

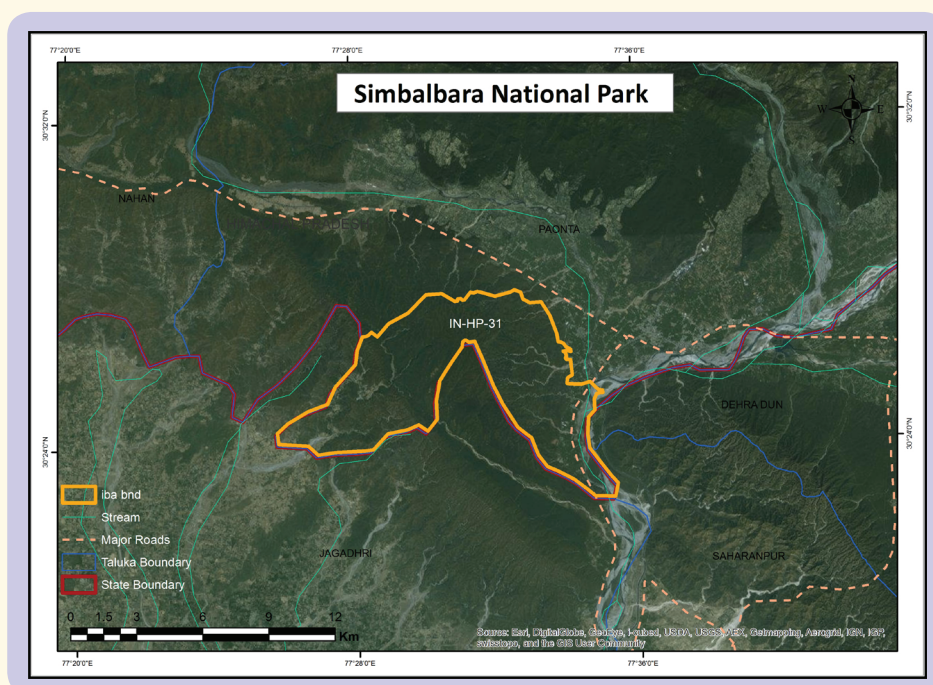
SIMBALBARA NATIONAL PARK

IN-HP-31

IBA Site Code :	IN-HP-31	Area :	27.88 sq. km
State :	Himachal Pradesh	Altitude :	651 msl (highest peak)
District :	Sirmaur (Nahan)	Rainfall :	1,150 mm
Coordinates :	77° 29' 12.185" E, 30° 27' 17.304" N	Temperature :	-2 °C to 45 °C
Ownership :	State	Biogeographic Zone :	Semi-arid
		Habitats :	Dry Mixed Deciduous Forest

IBA CRITERIA: A1 (Threatened species). Data Deficient.

PROTECTION STATUS: Earlier Wildlife Sanctuary, notified in June 29, 1972. Upgraded to National Park, final notification on June 7, 2013.



GENERAL DESCRIPTION

Simbalbara National Park is situated in Shivalik area of Himachal Pradesh. It was formerly a hunting reserve of the Maharaja of Sirmaur. The park is included in the biogeographic province 4A (Rodgers & Panwar 1988). The floral and faunal affinities are close to Dry Deciduous Forests of the northern plains (Singh *et al.* 1990). The forests of this national park harbour many Biome 8 species. Simbalbara NP is adjacent to Kalesar National Park of Haryana, which lies to its southeast. Moreover, Kalesar Wildlife Sanctuary is also adjacent to Kalesar NP. The total area of Kalesar NP and WLS in Haryana is c. 133 sq. km. Together, these three protected areas form a large inter-state conservation unit of c. 162 sq. km in the Shivalik Hills. The Shivaliks are composed of unconsolidated sandstone and conglomerate that are extremely prone to erosion. The soil is extremely porous, friable, and highly drained (Bhargav *et al.* 2007).

Simbalbara WLS was first notified in 1958 under the Indian Forest Act, 1927 for a period of 10 years vide notification No. Ft. 4/56 dated February 8, 1958. It was again notified as a wildlife sanctuary under the Indian Forest Act, 1927 vide HP Government notification No. 5-1/72-SF dated June 29, 1972. The preliminary notification of the sanctuary under the Wildlife (Protection) Act, 1972 was made vide HP Government notification No. 5-11/70-SF dated March 27, 1974. The sanctuary was finally notified under the Wildlife (Protection) Act vide HP Government notification No. FFE-B-F(6)-27/99 dated 1/11/99. The intention notification of the sanctuary to be converted to a national park was dated July 28, 2010. The final notification of Simbalbara NP came on June 7, 2013 (Gupta 2015). It was given the higher status of National Park through the Rationalization of Boundaries of Protected Areas in HP Forest Department. Thus, this small national park is the



Courtesy: SANJEEVA PANDEY

Simbalbara NP in the Shivalik range has dry mixed deciduous forest. It adjoins Kalesar NP of Haryana, and both these IBAs and the adjoining reserve forest form a large habitat for many Threatened and Near Threatened species

only one in the highly populated Shivalik area. It is also known as Colonel Sherjung National Park.

Simbalbara National Park has Northern Dry Mixed Deciduous Forest and Chir Pine Forest. It is the only national park of Himachal Pradesh with Sal *Shorea robusta* forests. Historically, it had tiger and elephant in the area which are now locally extinct due to hunting and fragmentation of their habitats. Sometimes, a stray tiger or elephant is reported from this area. There are also some dry bamboo brakes. *Eucalyptus* has been introduced (Singh *et al.* 1990). Simbalbara Forest Rest House is well-connected from Puruwala and provides a beautiful view of the valley.

AVIFAUNA

The avifauna is poorly recorded, but Bhargav *et al.* (2007) provided a preliminary list of 117 bird species. Seasonal changes in the Shivalik avifauna are very striking, as most of the high altitude birds such as cuckoos, wallcreepers, and warblers descend to this area. As the forest is still intact in places, further surveys would yield more species than are recorded. Presently, we know of only two globally Threatened species occurring here. Till more research is undertaken, this site is considered Data Deficient as far as bird information is concerned.

Among the Critically Endangered species, the White-rumped Vulture *Gyps bengalensis* and Slender-billed Vulture *G. tenuirostris* are sometimes seen, but their

CRITICALLY ENDANGERED

White-rumped Vulture	<i>Gyps bengalensis</i>
Slender-billed Vultur	<i>Gyps tenuirostris</i>
Red-headed Vulture	<i>Aegypius calvus</i>

ENDANGERED

Egyptian Vulture	<i>Neophron percnopterus</i>
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NEAR THREATENED

Painted Stork	<i>Mycteria leucocephala</i>
Indian Spotted Eagle	<i>Clanga hastata</i>
Pallid Harrier	<i>Circus macrourus</i>
Alexandrine Parakeet	<i>Psittacula eupatria</i>
European Roller	<i>Coracias garrulus</i>

BIOME 11: INDO-MALAYAN DRY ZONE

Plum-headed Parakeet	<i>Psittacula cyanocephala</i>
Common Indian Nightjar	<i>Caprimulgus asiaticus</i>
Indian Grey Hornbill	<i>Ocyrceros birostris</i>
Brown-headed Barbet	<i>Megalaima zeylanica</i>
Yellow-fronted Pied Woodpecker	<i>Dendrocopos mahrattensis</i>
Black-rumped Flameback	<i>Dinopium benghalense</i>
Indian Bushlark	<i>Mirafra erythroptera</i>
Sand Lark	<i>Calandrella raytal</i>
Common Woodshrike	<i>Tephrodornis pondicerianus</i>
Indian Robin	<i>Saxicoloides fulicata</i>
Large Grey Babbler	<i>Turdoides malcolmi</i>
Jungle Babbler	<i>Turdoides striatus</i>
Rufous-fronted Prinia	<i>Prinia buchanani</i>
Jungle Prinia	<i>Prinia sylvatica</i>
Ashy Prinia	<i>Prinia socialis</i>
White-browed Fantail	<i>Rhipidura aureola</i>
Brahminy Starling	<i>Sturnus pagodarum</i>
White-bellied Drongo	<i>Dicrurus caerulescens</i>
Ashy Woodswallow	<i>Artamus fuscus</i>

population is very low. Red-headed Vulture *Aegypius calvus* is occasionally seen. Among Endangered species, only Egyptian Vulture *Neophron percnopterus* has been reported till now, that also from the surrounding villages. The forest has good representative of species of Biome-11 (Indo-Malayan Dry Zone). Out of 59 species reported from this biome (BirdLife International undated), 19 have been reported from here but more are likely to be found. White-rumped Shama *Copsychus malabaricus* was sighted by Sanjeeva Pandey (*in litt.* 2015) in the Sal forests of Danda Sukhchainpur of this area.

OTHER KEY FAUNA

Himalayan Brown Goral *Naemorhedus goral*, Sambar *Rusa unicolor*, and Chital *Axis axis* are the common mammals found here. Almost all the representative large mammalian species of subtropical forests of the Lower Himalaya are present here, except for Tiger *Panthera tigris*, which became locally extinct due to hunting.



Courtesy: SANJEEVA PANDEY

Sanjeeva Pandey, Principal Chief Conservator of Forests (2nd from left) with his staff in Simbalwara National Park

LAND USE

- Agriculture
- Nature conservation and research

THREATS AND CONSERVATION ISSUES

- Grazing
- Collection of timber, fuelwood, forest products
- Extraction of fodder
- Disturbance due to religious activities
- Human habitations

The local people have rights or leases for grazing, collection of timber, fuelwood and minor forest produce, fodder extraction, and religious activities.

KEY CONTRIBUTOR

Sanjeeva Pandey.

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